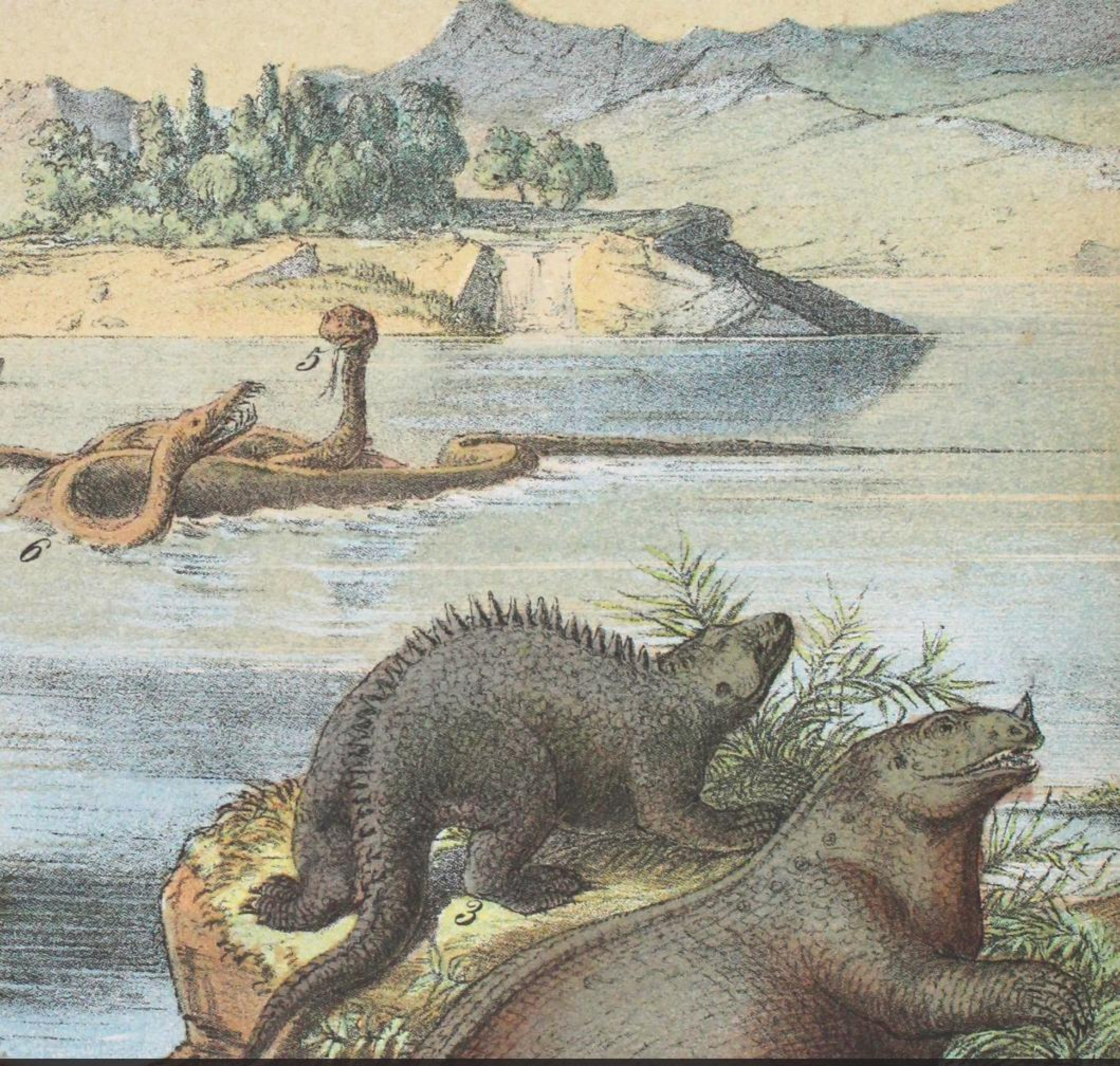

NATURAL PHENOMENA
A CATALOGUE *of* EARTH SCIENCES

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Natural Phenomena

A Catalogue of Earth Sciences

From Friday 25th May 2018.

The excellent '*Volcanoes*' exhibition at the Bodleian's Weston Library last year was the inspiration behind compiling this mini-catalogue of prints and maps illustrating natural phenomena. Oxford has a rich history in the research and study of the earth sciences and it is a subject we get asked for on a regular basis. The following collection provides an insight into the historical documentation and illustration of volcanology, geology, palaeontology, meteorology and other natural phenomena, from early 17th century depictions of volcanic activity in the Campi Flegrei, to fascinating comparative charts of natural and man-made wonders.

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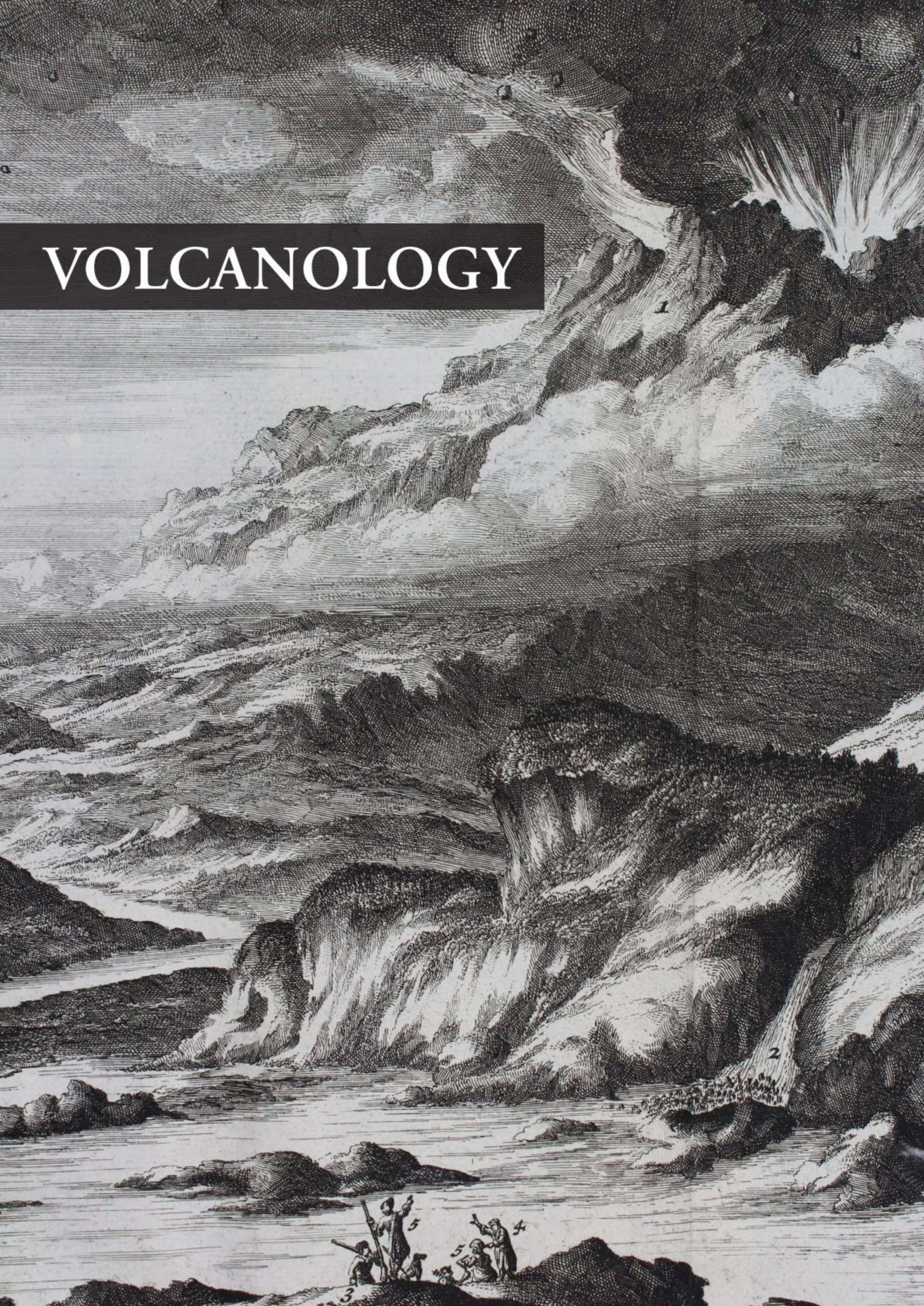
VOLCANOLOGY



A la solfatarra detta da Plinio campi Flegrei da Strabone forse vulcani luoghi di marauigliosa natura tutto solato di solfo et intorniato de alti colli eccetto dal lato. B. ove si entra verso
Pozzuolo. C. fossa volgarmente detta gabbia piena d'acqua nera et sporca, che di continuo bolle, et che aggiatamente ui si cuoce qual si voglia cosa. D. dalle pietre et terra di
questi monti esce gran quantità di solfo. E. de queste si caua alume. F. officine da stillare il solfo bianco.
48

01. La Solfataria detta da Plinio... [The Fumaroles at the Sulfatara Volcano]

Aegidius Sadeler II after Etienne Dupérac
Copper engraving
[Marco Sadeler, Prague: 1606]
Image 137 x 265, Plate 162 x 264, Sheet 220 x 332 mm

An early seventeenth century view of volcanic activity in the *Campi Flegrei*, one of the earliest engravings on the subject, taking the same vantage point as Braun & Hogenberg's '*Mirabilium Sulphureorum Motium Apud Puteolos campos*' published at the end of the sixteenth century. The print was plate 48 in a first printing of Sadeler's *'Vestigi delle antichita di Roma, Tiuoli, Pozzuolo et altri luochi',* published in 1606.

The print depicts a number of curious tourists and travellers looking at the smoking fumaroles of the Sulfatara Volcano. Solfatara is a shallow volcanic crater at Pozzuoli, near Naples, and is part of the volcanic area known as the Phlegraean Fields. It is dormant, and was for centuries a popular tourist destination. The print is lettered, with a key at the bottom indicating the different volcanic activity and locations depicted.

Condition: First state, second includes the publication details. Time toning and foxing mainly in margins.
[45151]
£280

02. [The Court of Vulcan]

Francis Delaram
Copper engraving
[London: W. Barrett, 1615]
Image 99 x 120, Plate 104 x 126, Sheet 275 x 183 mm

A view of volcanic caldera in the mountains near Pozzuoli. This engraving of the Phlegraean Fields, *Campi Flegrei*, is heavily based on the Braun & Hogenberg '*Mirabilium Sulphureorum Motium Apud Puteolos campos*' published at the end of the sixteenth century.

The so-called 'court' is shown here populated with curious onlookers (one in a sedan chair) and explorers, who flocked to the area to watch the sulphurous smoke and flames emitted out of the volcanic ground. The two figures in the foreground bear resemblance to those that feature in Braun & Hogenberg's engraving and are in that instance known to be the artist Georg Hoefnagel, and the scholar Abraham Ortelius discussing the scene before them.

An illustration from George Sandy's four volume work *'A Relation of a Journey begun An: Dom: 1610. Foure Bookes. Containing a description of the Turkish Empire, of AEgypt, of the Holy Land, of the Remote parts of Italy, and Ilands adioyning'.*

Condition: Printed on full sheet with text above and below image. Time toning to left edge of sheet, not affecting image.
[45193]
£120

03. Sicilia

Bertius, Petrus
Copper engraved
[Amsterdam, c.1616]
95 x 135 mm

A miniature map of the Island of Sicily, beautiful detailed with the inclusion of notable towns, the mountains as well as the volcano Mount Etna have been depicted pictorially.

From a Latin edition of Petrus Bertius' '*Tabularum geographicarum contractarum*'. The title is enclosed in a decorative strap-work cartouche. A scale in miles is included in the top left corner.

Condition: Latin text on verso.
[43119]
£275

04. Tabula Islandiæ Auctore Georgio Carolo Flandro
Mercator, Gerard and Hondius, Jodocus
Copper engraved with hand colour
[Henricus Hondius and Jan Jansson. Amsterdam, 1633]
377 x 492 mm

A cartographically significant map of Iceland, visually rich, and ornamented in superb hand colour. The fjords of the Icelandic coast are shown to full effect, and rivers, mountains, lakes, and icefloes are all depicted pictorially, as is the massive volcano of Hekla, shown here in a fiery eruption. Off the coast, a number of sea monsters and sailing ships are shown, and two compass roses criss-cross the map with rhumb lines.

In the bottom left and right corners are two decorative strapwork cartouches. One, enclosing a scale in German and Gallic miles, is topped with an armillary sphere, while the other, containing the title, features a pair of winged female sprites, likely representing the Icelandic *Huldufolk*, holding urns of water that cascade over the title. Below, the imprint ribbon is blank.

Condition: German text on verso.
[42733]
£1,200

05. [Japansche sulferberg Sjurpurama. - Sakurajima volcano erupting]

[Anonymous]
Copper engraving
[Amsterdam. c.1669]
Image 242 x 342, Plate 250 x 350, Sheet 323 x 376 mm

An early and dramatic vista depicting a group of painters studying a fiercely erupting Sakurajima volcano. They are tiny in this vast landscape, standing with their guides and interpreter in the foreground. Molten lava pours down the hills and into the lake they stand at the other side of. Notable points are numbered, with descriptions in French and German.

This engraving, likely to have been carried out by van Meurs or Olfert Dapper, is one of the earliest printed depiction's of volcanic activity outside of Europe. The composite volcano of Sakurajima, a former island in Kagoshima Prefecture in Kyushu, Japan, is still active today. The lava flows of the 1914 eruption connected it with the Osumi Peninsula.

A plate from a French printing of Montanus' encyclopaedic narrative on all things Japanese' '*Gedenkwaerdige gesantschappen der Oost-Indische Maatschappy in 't Vereenigde Nederland, aan de kaisaren van Japan*'. printed in Amsterdam by Jacob van Meurs.

Condition: Central vertical fold, as issued.
[45150]
£300

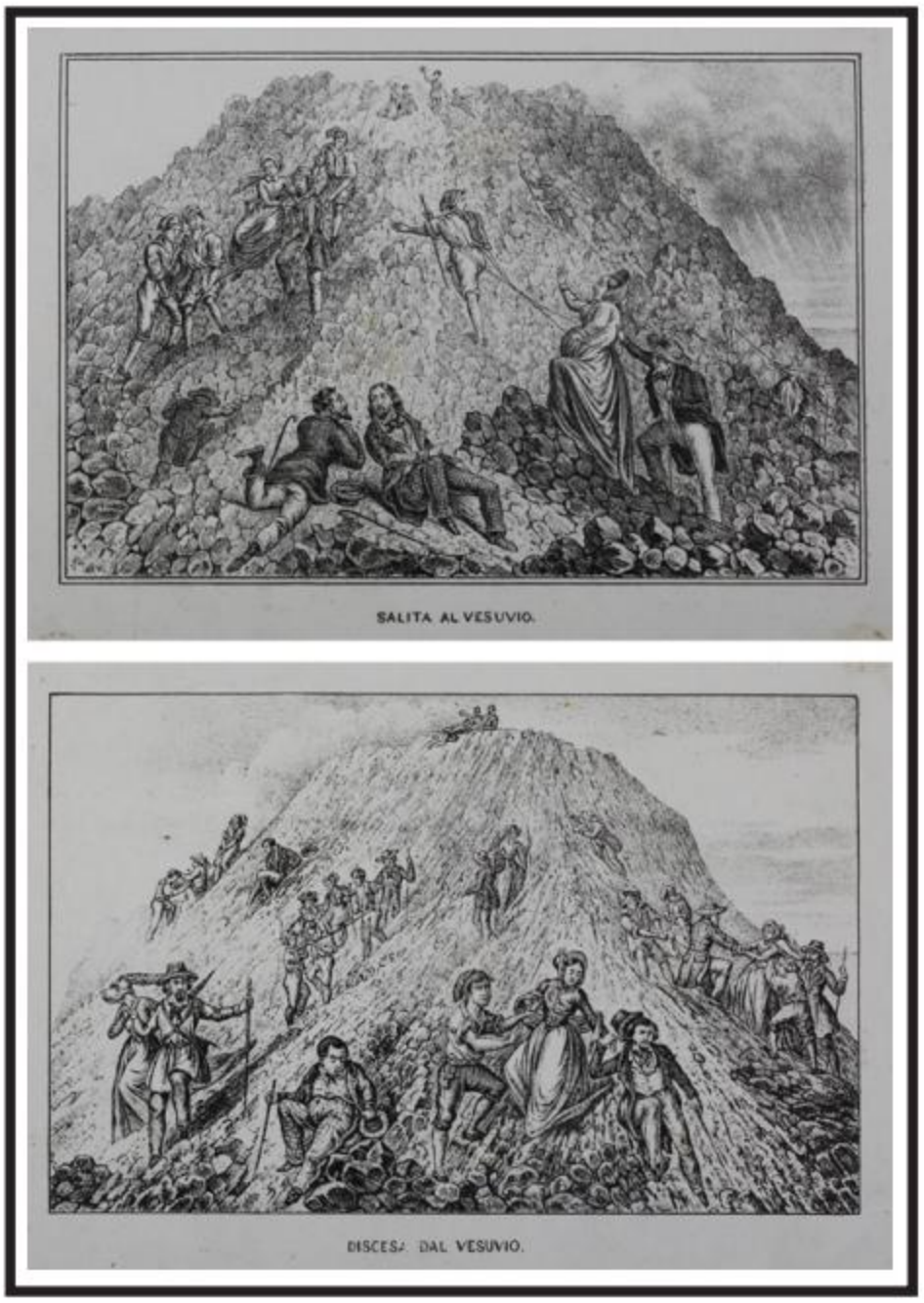
06. [Enceladus buried under Mount Etna]
Cornelis Bloemaert after Abraham van Diepenbeeck
Copper engraving
[Paris: Chez Nicolas L'Anglois, ruë Sainct Iacques, aux Colomnes d'Hercule, c. 1655]
Image 233 x 177, Plate 276 x 184, Sheet 434 x 282 mm

A depiction of the Giant Enceladus buried under Mount Etna, from Michel de Marolles' *'Tableaux du temple des muses'.* The huge and flame topped mountain stands on a sparsely populated island, with the giant trapped beneath. A pastoral scene has been depicted on a further island in the foreground.

Enceladus was the offspring of Gaia and Uranus (Earth and Sky), borne from the blood that fell when Uranus was castrated by their elder son Kronos. He was captured and buried after the *'Gigantomachy',* the epic battle between the Giants and the gods. Although traditionally opposed by Athena, Virgil and other later poets describe him as being struck down by Zeus. The image corresponds to this, with Zeus shown brandishing his lightning bolts at the top right of the image.

The ancient Greek stanza below the image comes from Aeschylus' *'Prometheus Bound'* (lines 450-458) and describes Typhon receiving a very similar punishment, proof of a later interchangeability between the two Giants. Earthquakes in the area have been blamed on him shifting position in his uncomfortable prison. Plate numbered '7' to lower right corner.

Condition: Small iron inclusion to centre right of sheet.
[45190]
£300



07. Salita Al Vesuvio / Discesa Dal Vesuvio.
[Anonymous]
Lithograph
c. 1840
Images 128 x 197 mm, Sheets 184 x 222 mm

A pair of satirical lithographs depicting tourists being helped by Italian guides to reach and climb down from the crater of Mount Vesuvius. The study of Volcanology was firmly established by the early nineteenth century and following William Hamilton's research and publications on the bay of Naples, Mount Vesuvius became a site of pilgrimage for any amateur volcanologist. Coupled with this the excavation of Pompeii and Herculaneum tourists visiting the destroyed site were taken to view the summit and crater of the culpable live volcano.

Condition: Old glue stains in each corner well outside of the image and inscription space.
[31022]
£150

VOLCANOES.

PUBLISHED UNDER THE DIRECTION OF THE COMMITTEE OF GENERAL LITERATURE AND EDUCATION, APPOINTED BY THE SOCIETY FOR PROMOTING CHRISTIAN KNOWLEDGE.

08. Volcanoes
Josiah Wood Whymper
Wood engraving with original hand colouring
Published under the Direction of the Committee of General Literature and Education, Appointed by the Society for Promoting Christian Knowledge [c. 1849]
Image 155 x 218, Sheet 177 x 278 mm

Plate 29 from Josiah Wood Whymper's *'Thirty Plates Illustrative of Natural Phenomona, Etc.'* The plate depicts an erupting volcano. Extensive explanatory text printed below.

Condition: Slight time toning and very minor foxing.
[45316]
£60

AIR VOLCANOES.

The principal Volcanoes of the earth pour forth, as it is well known, streams of burning lava, or mineral substances in a molten state; but there are other Volcanoes which send out merely water, mud, or air. Near Quito in South America, where fearful earthquakes have taken place, streams of water, and also of mud called "moya" have been poured from Volcanoes, so as to waste and destroy everything in the neighbourhood. It is a remarkable fact that these mud Volcanoes sometimes send forth vast quantities of small fish, supposed by Humboldt to have lived and multiplied in subterraneous cavities of the earth.

Near the small Indian village of Turbaco, twenty miles from Carthagena, in South America, are fifteen or twenty small Volcanoes, rising near each other in a marshy district on the borders of a forest. The simple inhabitants of the village have a tradition that these were formerly fire-volcanoes, but that a monk, by sprinkling holy water upon them, put out the fire, and changed them into water-volcanoes. It is not water only, however, but air that is sent out at each eruption, although on climbing to the top, the opening, which is from sixteen to thirty inches in diameter, is seen filled with water, through which the air-bubbles rise.

The surface of the ground is composed of clay, of a dark grey colour, cracked in various places, and quite bare of vegetation. The Volcanoes rise in the form of cones to the height of from nineteen to twenty-five feet; the circumference at the base being, in the largest, from seventy-eight to eighty-five yards. The air rises in these Volcanoes with considerable force, and with a loud noise, causing the water to be projected beyond the crater, or to flow over its brim. Some of the openings by which the air escapes, are situated in the plain, without any rising of the ground. The natives assert that there has been no change in the shape or the number of the cones for twenty years, and that the little cavities are filled with water even in the driest seasons. A stick can easily be pushed into the openings to the depth of six or seven feet, and the dark-coloured clay or mud is exceedingly soft. About five explosions from the several Volcanoes take place every two minutes. The cones have, no doubt, been raised by the condensed air, and a dull sound which is heard fifteen or eighteen seconds before each explosion, proves that the ground beneath is hollow.

PUBLISHED UNDER THE DIRECTION OF THE COMMITTEE OF GENERAL LITERATURE AND EDUCATION, APPOINTED BY THE SOCIETY FOR PROMOTING CHRISTIAN KNOWLEDGE.

No. 18.] PRICE ½d. PLAIN; 1d. COLOURED.

09. Air Volcanoes
Josiah Wood Whymper
Wood engraving with original hand colouring
Published under the Direction of the Committee of General Literature and Education, Appointed by the Society for Promoting Christian Knowledge [c. 1849]
Image 172 x 210, Sheet 222 x 277 mm

Plate 18 from Josiah Wood Whymper's *'Thirty Plates Illustrative of Natural Phenomona, Etc'.* The plate depicts figures standing around a number of small volcanoes known as 'air volcanoes' due to their emitting air and water, rather than molten lava. Extensive explanatory text printed below.

Condition: Slight time toning and minor foxing.
[45320]
£60

10. Volcano in the Sandwich Islands
William Finden after F. Howard Junior
Steel engraving
Fisher, Son & Co, London & Paris, 1845
Image 80 x 120, Plate 115 x 181, Sheet 200 x 275 mm

A dramatic vista depicting a number of erupting volcanic cones on the Hawaiian Sandwich Islands, including the volcano of Ki-rau-e-a. A tiny pair of figures can be seen in silhouette in the foreground. Engraved after a painting by F. Howard, intermediary sketch by William Ellis.

Condition: Occasional light foxing to margins, not affecting image.
[45152]
£40

HALEAKALA

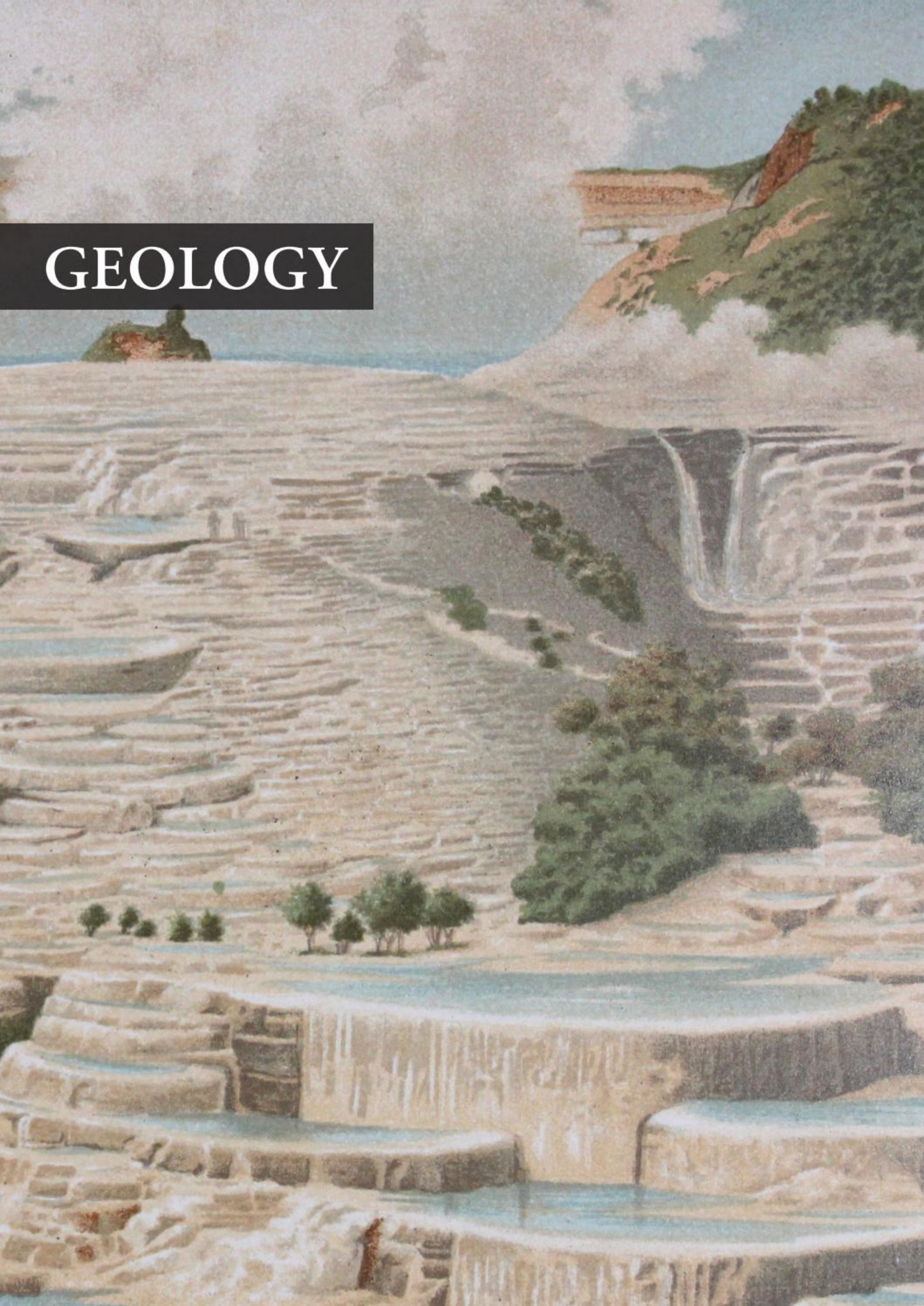
11. Haleakala
R E
Lithograph with tint stone
Hullmandel & Walton,. London: Hurst & Blackett,
Great Marlborough Street. 1854
Image 112 x 182mm

A view looking across the expanse of the massive shield volcano of Haleakala on the Hawaiian Island of Maui. The summit of the volcano was named Haleakala "house of the sun" by the early indigenous population due to the alignment of the rising sun over the eastern side of the mountain.

According to local mythology, the grandmother of the demigod Ma-ui resides in the crater of Haleakala, it was believed that Maui's grandmother helped him capture the Sun and force it to slow its journey across the sky in order to extend the day.

Condition: Foxing and dirt to edges of sheet.
[10807]
£40

GEOLOGY

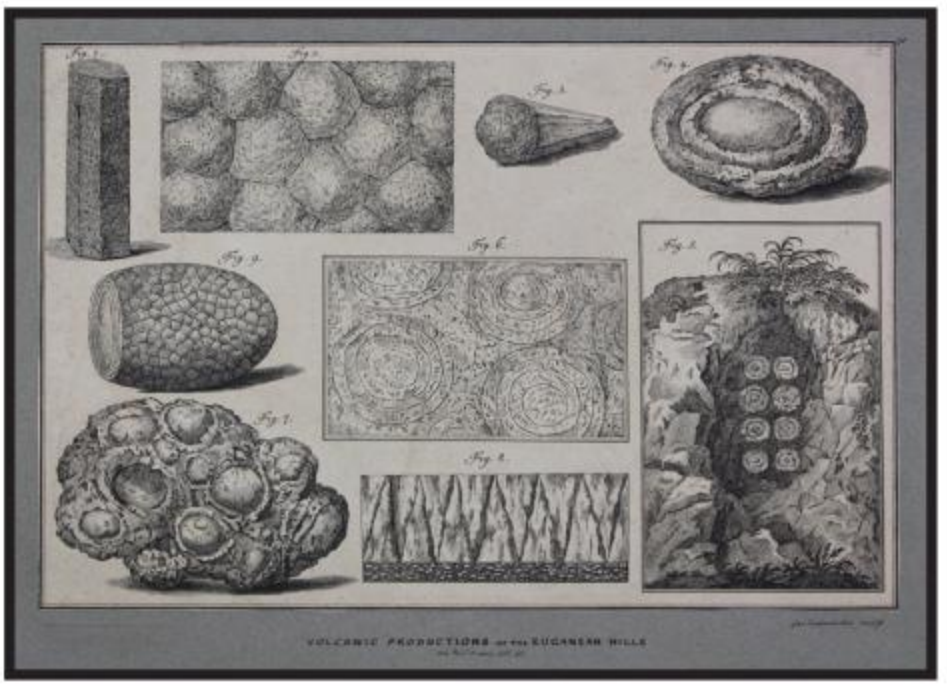


Plates from Jacapo Leonardis' rare publication *'A series of plates representing the most extraordinary and interesting basaltic mountains, caverns and causeways, in the known world: fifty engravings'*.

The engravings for this series are 18th century but were only published in the first quarter of the 19th century. Curiously this set have been trimmed to the printed border and laid to album pages, with hand written titles and artist's details inscribed underneath.

Jacopo da Leonardis (1723-1794) was an Italian printmaker and publisher. He was born in Palmanova in the Venetian Republic, and lived and worked in Venice. Leonardis was a student of both M. Benville and Tiepolo, and obtained the first prize at the Accademia di Belle Arti of Venice.

Although he specialised in engraving plates for book illustrations, he also etched a number of plates after Italian masters, including Giulio Carpioni, Sebastiano Conca, and Tintoretto. He was also known as Giacomo or Jacopo da Leonardis.



12. Volcanic Productions of the Euganean Hills
Jacopo Leonardis
Etching
[London: John Manson, c. 1825]
Image 245 x 365

A detailed engraving of various pieces of volcanic stone, together with volcanic production in situ in the Euganean Hills. Plate 25, this plate was first published in 1775, in volume 65 of the Royal Society's scientific journal '*Philosophical Transactions*' (inscribed below plate in its common abbreviation 'Phil. Trans'.)
[45426]
£75

13. Basaltine Columnar Group of Savignago
Jacopo Leonardis after Antonius Biasini
Etching
[London: John Mason, c. 1825]
Image 242 x 362

A view of a huge basaltine columnar group forming a cliff, with a cascade of fallen rock in the foreground.
Plate 11.
[45435]
£120

Antonio Biasini del
Jac Leonardis Sculp
BASALTINE COLUMNAR GROUP IN THE VAL NERA DI S.PIER MOSSOLINO, CALLED IL CROTONE BY THE INHABITANTS

14. Basaltine Columnar Group in the Val Nera di S. Pier Mossolino, called Il Crotone by the Inhabitants
Jacopo Leonardis after Antonius Biasini
Etching
[London: John Manson, c. 1825]
Image 242 x 357

A detailed engraving of the basalt rock formations in Italy's Val Nera. Plate 12.
[45427]
£120

A CAVERN, FROM WHENCE ISSUES IL TORRENTE RANA, NEAR MONTEDIMALO

15. A Cavern, From Whence Issues Il Torrente Rana, Near Montedimalo

Jacopo Leonardis after Antonius Biasini
Etching
[London: John Mason, c. 1825]
Image 240 x 360, Sheet 358 x 487 mm

A view of a cavern near the town of Monte di Malo, in the Veneto. A figure holding a staff peers in, whilst in the foreground two men talk and gesticulate. Columnar basalt rocks lie tumbled down the tree-lined slope to the left. Plate 18.
[45437]
£100

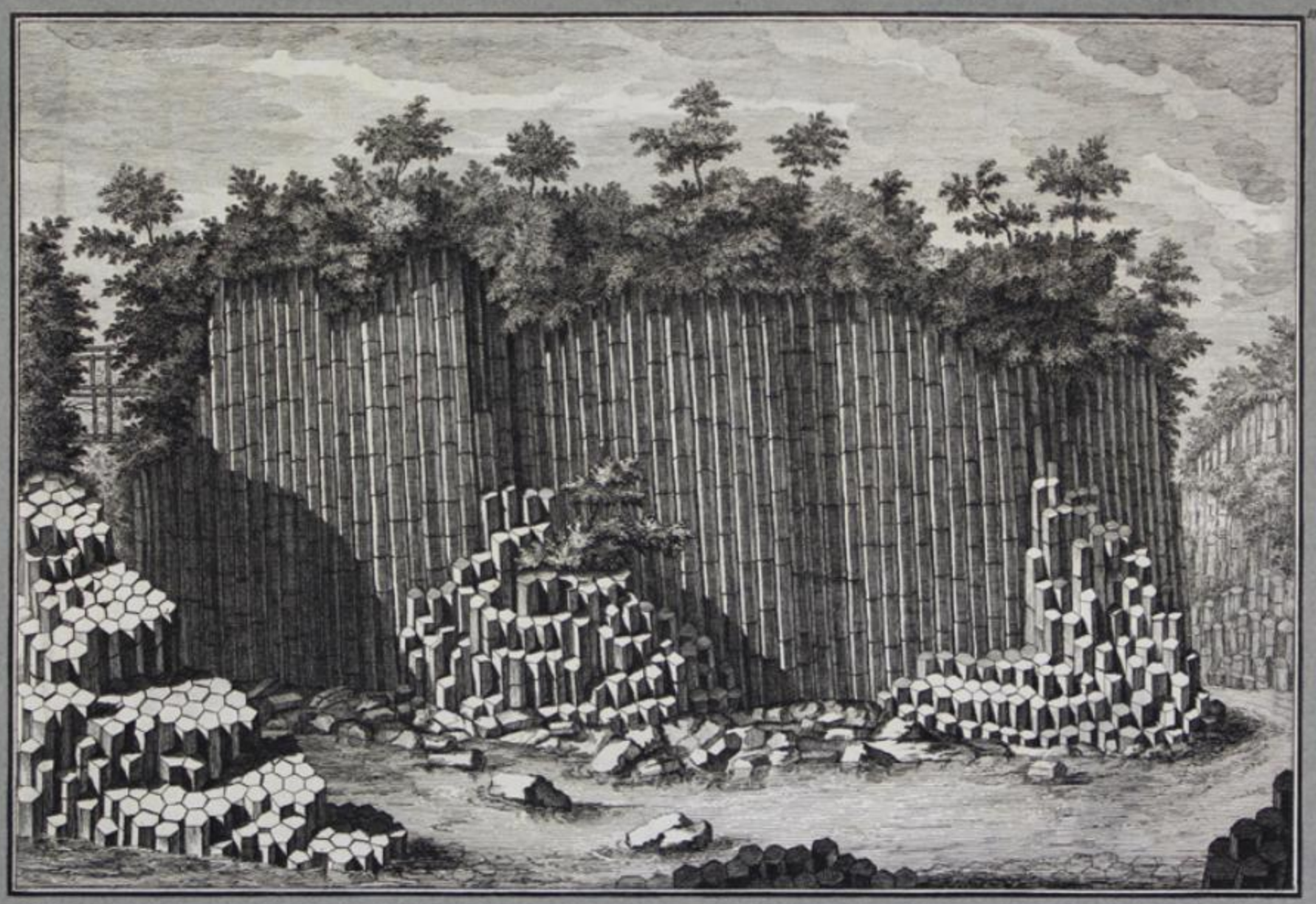
16. A Cascade, Forming the Upper Part of the Valley Alpone, near S. Giovanni Illarione

Jacopo Leonardis after Antonius Biasini
Etching
[London: John Mason, c. 1825]
Image 237 x 358

A spectacular engraving of two gentlemen standing amongst a magnificent columnar rock valley, a waterfall cascades before them. Plate 30.
[45431]
£120

17. Another Columnar View in the Valley Alpone Below the Great Cascade
Jacopo Leonardis after Antonius Biasini
Etching
[London: John Mason, c. 1825]
Image 242 x 360

A view of a cascading river flowing past a fantastic columnar basalt rock formation, in the Veronese Alpone Valley. Plate 32.
[45433]
£120


Antonio Biasini delin
Jac Leonardis Sculp
THE HIGH PERPENDICULAR COLUMNAR BANK, OPPOSITE THE GREAT CASCADE IN THE VALLEY ALPONE

18. The High Perpendicular Columnar Bank, Opposite the Great Cascade, in the Valley Alpone
Jacopo Leonardis after Antonius Biasini
Etching
[London: John Mason, c. 1825]
Image 242 x 362

A detailed engraving of an impressive columnar rock bank, situated in the Veronese Alpone Valley. Plate 33.
[45434]
£120

PICTURESQUE COLUMNAR VIEW IN THE VALLEY ALPONE, BELOW THE GREAT CASCADE

19. Picturesque Columnar View in the Valley Alpone, below the Great Cascade

Jacopo Leonardis after Antonius Biasini
Etching
[London: John Mason, c. 1825]
Image 242 x 357

A view of a river flowing through a columnar valley. At the top is a water wheel, channelling water from the Veronese hills and sending it cascading between the rocks below. Two gentleman watch the scene from the lower left foreground. Plate 31.
[45430]
£120

20. A Volcanic Columnar Hill, in the Valley and Torrent of Ronca

Jacopo Leonardis after Antonius Biasini
Etching
[London: John Mason, c. 1825]
Image 242 x 357

A view of a hill formed of volcanic basalt columns, in the Ronca region of the Veneto. Plate 13.
[45429]
£120

Plates from Michel de Rozière's contribution to Napoleon's '*Description de l'Egypte*', volume entitled '*Minéralogie, Bords de la mer rouge et vallée de l'égarement, Coquilles fossiles*'.

Napoleon saw his invasion of Egypt as an opportunity to discover and catalogue the country's wealth of geological and archaeological specimens. He employed 151 savants under the directive '*The Commission of Sciences and Arts*', including scholars, mineralogists, archaeologists and geologists.

Many of the group were just out of education, and their mission was kept secret until the last moment. They were blindly streamed by foot and coach to southern France, where they boarded ships alongside the soldiers and sailors and set sail for an unknown destination.

This deployment of intellectual resources is considered by some as an indication of Napoleon's devotion to the principles of the Enlightenment, and by others as a masterstroke of propaganda obfuscating the true motives of the invasion; the increase of Napoleon's power.

Nonetheless, his discoveries in Egypt gave rise to fascination with Ancient Egyptian culture and the birth of Egyptology in Europe.

François-Michel de Rozière (1775-1842) was a French mining engineer and mineralogist. Soon after graduating from the School of Mines he was sent as an assistant mineralogist to Egypt, on Napoleon's 1798 scientific expedition.

When his superior, Deodat de Dolomieu, became sick and went home after only nine months, Rozière was suddenly bumped up to chief mineralogist, at the age of 23. He thus turned his attention to collecting and cataloguing mineral samples from all over Egypt.

Upon his return to Paris in 1801, he took charge of writing the volume on minerals for the scientific report on Napoleon's expedition, the *'Description de l'Égypte'* (1809-28). Though certainly exemplary, this work is Rozière's only scholarly contribution to science.

21. Arabie Pétrée (Mont Sinaï. Mont Horeb)
François Michel de Rozière
Copper engraving with hand colouring
[Paris, c. 1809]
Image 385 x 340, Plate 557 x 440, Sheet 680 x 504 mm

A finely engraved and detailed plate depicting granite and herborised quarts samples.

Condition: Light foxing to right margin, not affecting image. Blindstamp to top right, as issued.
[45203]
£200

22. Arabie Pétree (Râs Mahammed et Cotes du Golfe Elantique); diverses roches primitives. Madreporites
François Michel de Rozière
Copper engraving with hand colouring
[Paris, c. 1809]
Image 485 x 324, Plate 575 x 445, Sheet 680 x 504 mm

A finely engraved and detailed plate of 'Madrepore' (stone coral, *Scleractinia*) and other early rock samples.

Condition: Light foxing to right margin, not affecting image. Blindstamp to top right, as issued.
[45198]
£200

23. Déserts situés entre le Nil et la Mer Rouge

François Michel de Rozière
Copper engraving with hand colouring
[Paris, c. 1809]
Image 465 x 350, Plate 555 x 420, Sheet 680 x 504 mm

A finely engraved and detailed plate of Porphyry, igneous rock, samples.

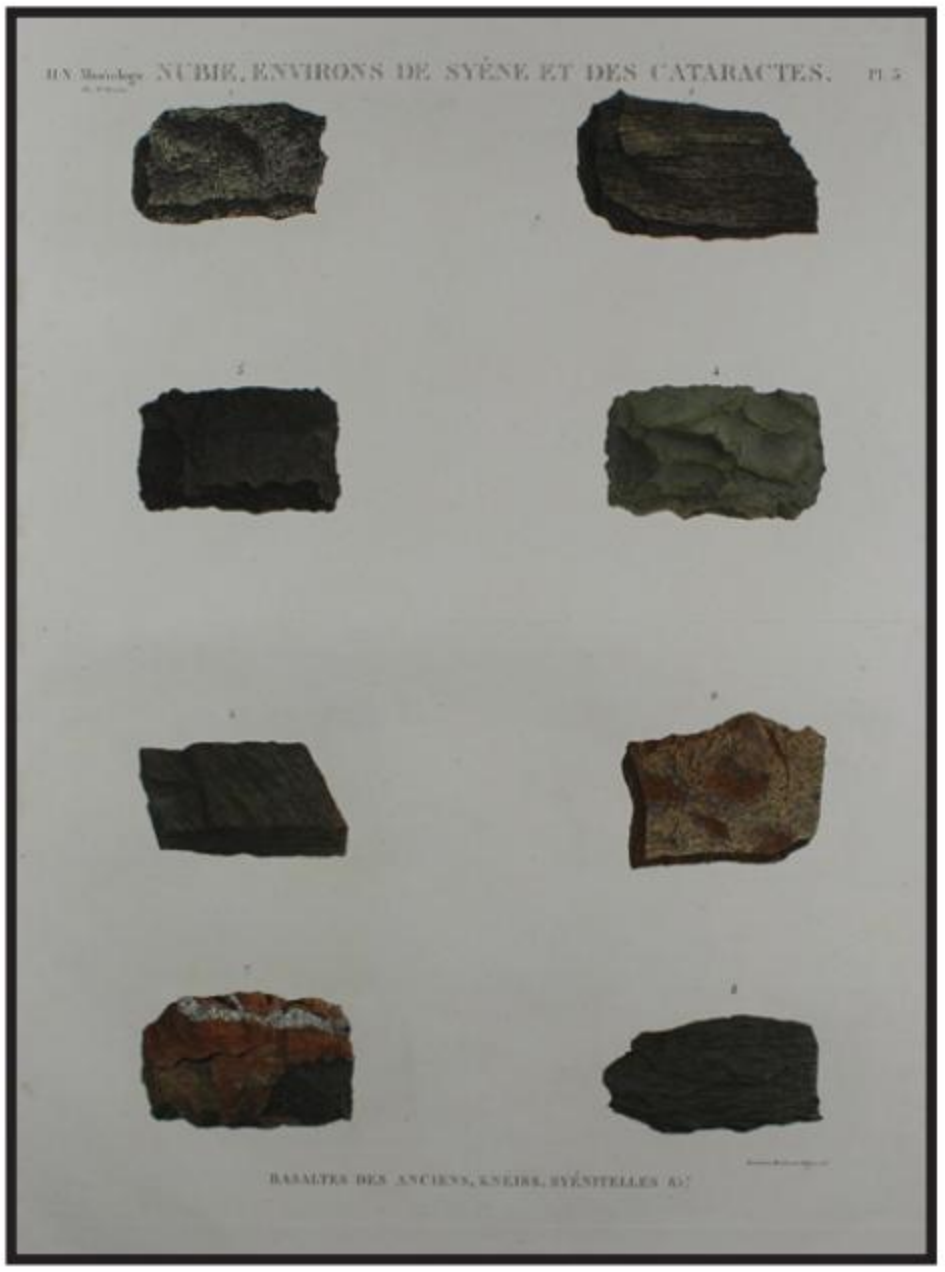
Condition: Light foxing to top margin, not affecting image. Blindstamp to top right, as issued.
[45206]
£200

24. Éléphantine et Environs de Syène

François Michel de Rozière
Copper engraving with hand colouring
[Paris, c. 1809]
Image 405 x 320, Plate 580 x 435, Sheet 680 x 504 mm

A finely engraved and detailed depiction of rock samples excavated from the island of Elephantine and the banks of the Nile.

Condition: Light foxing to top margin, not affecting image. Blindstamp to top right, as issued.
[45205]
£200

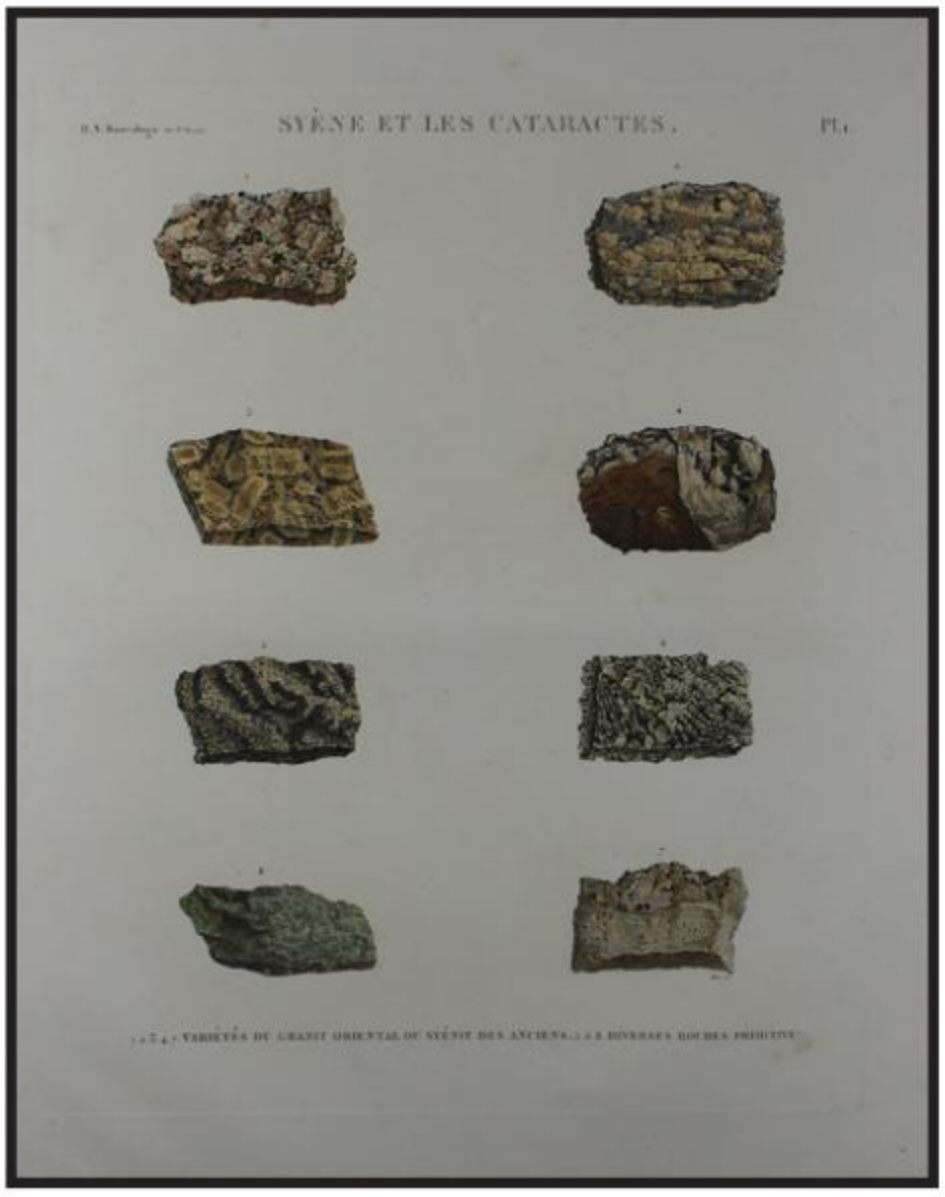


25. Nubie, Environs de Syène et des Cataractes; Basaltes des Anciens, Knéiss, Syénitelles

François Michel de Rozière
Copper engraving with hand colouring
[Paris, c. 1809]
Image 485 x 324, Plate 560 x 430, Sheet 680 x 504 mm

A finely engraved and detailed plate of basalt samples.

Condition: Residue from original paper guard to left margin, not affecting image. Blindstamp to top right, as issued.
[45197]
£200



26. Syène et les Cataractes

François Michel de Rozière
Copper engraving with hand colouring
[Paris, c. 1809]
Image 445 x 335, Plate 525 x 410, Sheet 680 x 504 mm

A finely engraved and detailed plate depicting varieties of granite and ancient rock compositions.

Condition: Light foxing to right margin, not affecting image. Small surface abrasion to key at bottom of sheet. Blindstamp to top right, as issued.
[45204]
£200

27. Tombeaux des Rois, Pyramides des Memphis
François Michel de Rozière
Copper engraving with hand colouring
[Paris, c. 1809]
Image 500 x 350, Plate 584 x 430, Sheet 680 x 504 mm

A finely engraved and detailed plate illustrating various sedimentary, Silica, rock samples and fossilised shells, found in the region of the Tombs of Kings and the Pyramids of Memphis.

Condition: Light foxing to right margin, not affecting image. Blindstamp to top right, as issued.
[45207]
£200

28. Vallée et Port de Qoseyr, Birlet Qeroun; fossiles et concrétions
François Michel de Rozière
Copper engraving with hand colouring
[Paris, c. 1809]
Image 450 x 330, Plate 593 x 432, Sheet 680 x 504 mm

A finely engraved and detailed plate of fossils and concretions.

Condition: Light foxing to right margin, not affecting image. Blindstamp to top right, as issued.
[45195]
£200

Agassiz' Fossil Fish

Lithographic illustrations to Louis Agassiz's '*Monographie des poissons fossiles du Vieux Grès Rouge, ou Système Dévonien des Îles Britanniques et de Russie*' ('Monograph on Fossil Fish of the Old Red Sandstone, or Devonian System of the British Isles and of Russia'). This book was intended as a supplement to his '*Recherches sur les poissons fossils*', his major work on fossilised fish.

Jean Louis Rodolphe Agassiz (May 28, 1807- December 13, 1874) was a Swiss born biologist, geologist, and naturalist. He did pioneering work on glaciers, extensive work on the classification of extinct and living fishes, and was a important figure to early modern scientific teaching in the United States.

29. Coccosteus Decipiens Ag.
Joseph Dinkel after Louis Agassiz
Lithograph with hand colouring
Neuchatel (Suisse) Soleure : Aux frais de l'auteur.; Chez Jent et Gassmann. 1844-45
Image 357 x 250 mm, Sheet 450 x 294 mm

Condition: Some very light foxing to sheet.
[42720]
£120

30. Coccosteus Decipiens Ag.
Joseph Dinkel after Louis Agassiz
Lithograph with hand colouring
Neuchatel (Suisse) Soleure : Aux frais de l'auteur.; Chez Jent et Gassmann. 1844-45
Image 215 x 354 mm, Sheet 450 x 294 mm

Condition: Light foxing to sheet
[42824]
£150

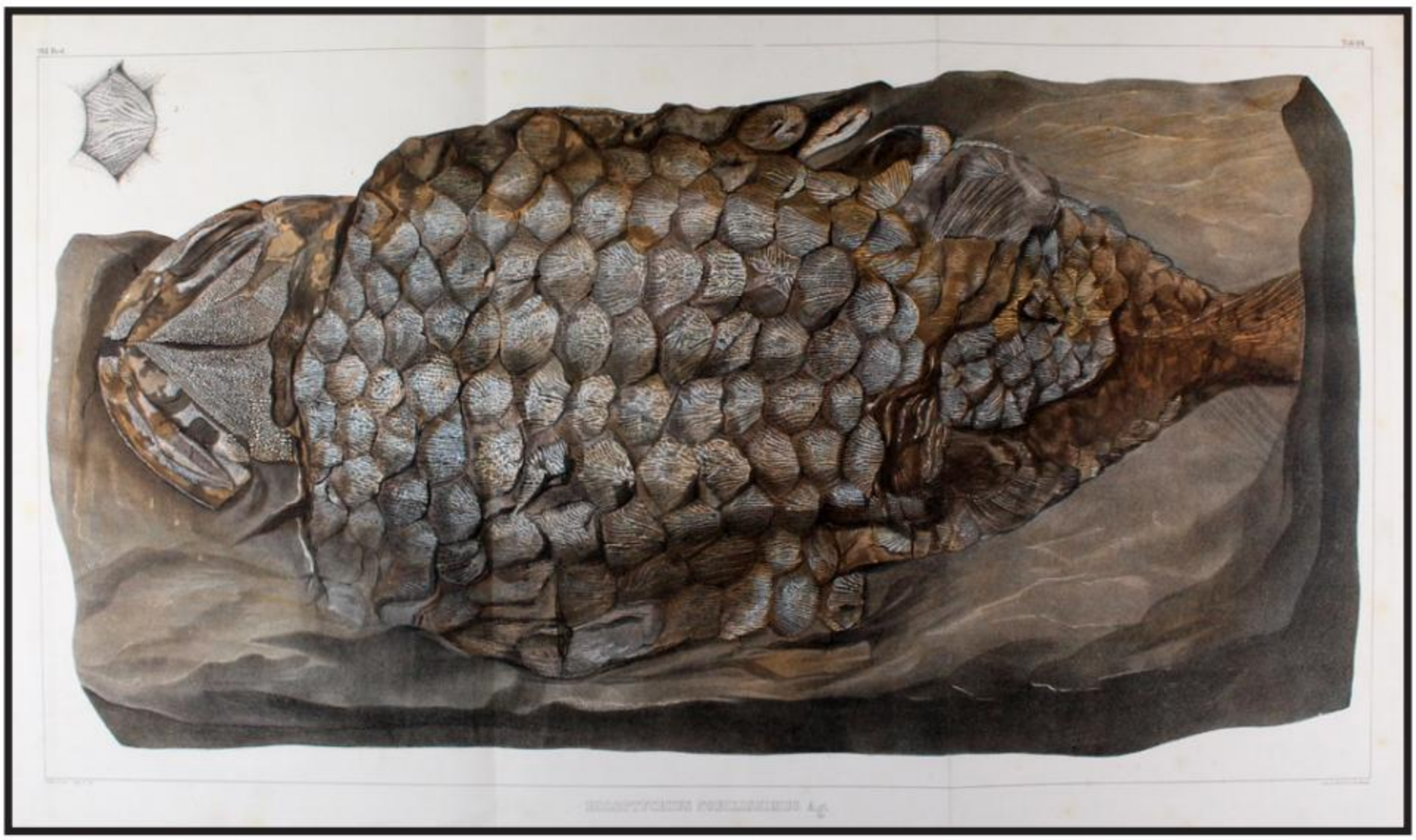
31. Coccosteus Decipiens Ag.
Joseph Dinkel after Louis Agassiz
Lithograph with hand colouring
Neuchatel (Suisse) Soleure : Aux frais de l'auteur.; Chez Jent et Gassmann. 1844-45
Image 215 x 354 mm, Sheet 294 x 450 mm

Condition: Light foxing to sheet
[42825]
£120

32. Diplopterus Borealis Ag.
Joseph Dinkel after Louis Agassiz
Lithograph with hand colouring
Neuchatel (Suisse) Soleure : Aux frais d e l'auteur.; Chez Jent et Gassmann. 1844-45
Image 218 x 349 mm, Sheet 294 x 450 mm
Condition: Light foxing to the sheet
[42836]
£150

33. Diplopterus Macrocephalus Ag.
Joseph Dinkel after Louis Agassiz
Lithograph with hand colouring
Neuchatel (Suisse) Soleure : Aux frais d e l'auteur.; Chez Jent et Gassmann. 1844-45
Image 311 x 510 mm, Sheet 450 x 570 mm

Condition: Light foxing to the sheet
[42837]
£180



34. Holoptychus Nobilissimus Ag.
Joseph Dinkel after Louis Agassiz
Lithograph with hand colouring
Neuchatel (Suisse) Soleure : Aux frais d e l'auteur.; Chez
Jent et Gassmann. 1844-45
Image 387 x 735 mm, Sheet 450 x 785
Condition: Light foxing to the sheet
[42842]
£200

35. Cheirolepis Cumminiae Ag.
Lady Gordon Cumming after Jean Louis Rodolphe Agassiz
Lithograph with hand colouring
Neuchatel (Suisse) Soleure : Aux frais de l'auteur.; Chez Jent et Gassmann. 1844-45
Image 216 x 357 mm, Sheet 294 x 450 mm
Condition: Foxing to sheet
[42831]
£150

36. [Geological formations]
Henry Winkles
Steel engraving
[c. 1849]
Image 211 x 265, Sheet 238 x 305 mm

A plate from Johann Georg Heck's *'Iconographic Encyclopaedia of Science, Literature, and Art'*, first published in 1849. The page depicts a variety of geological and rock formations.

[45185]
£40

37. [Mineral Samples]
Henry Winkles
Steel engraving
[c. 1849]
Image 211 x 265, Sheet 238 x 305 mm

A plate from Johann Georg Heck's *'Iconographic Encyclopaedia of Science, Literature, and Art'*, first published in 1849. The page illustrates a selection of mineralogical deposits and samples.

Condition: Time toning and some marks to margins.
[45183]
£40

38. [Mineralogical samples]
Henry Winkles
Steel engraving
[c. 1849]
Image 211 x 265, Sheet 238 x 305 mm

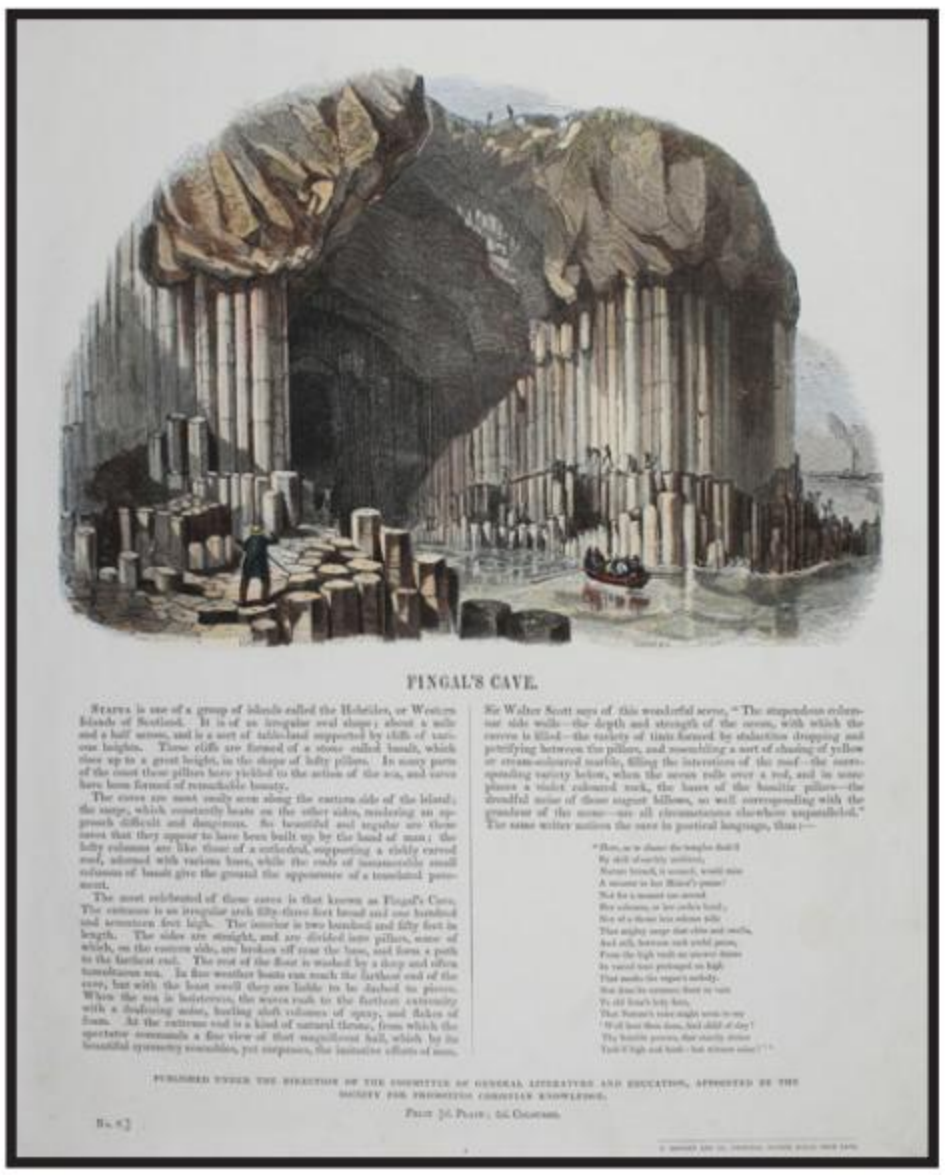
A plate from Johann Georg Heck's *'Iconographic Encyclopaedia of Science, Literature, and Art'*, first published in 1849. The page illustrates a selection of mineralogical deposits and samples.

Condition: Time toning and some marks to margins.
[45182]
£40

39. Transition from Mural to Involute Agate
G. Allen
Mezzotint printed in colours
Geol. Mag 1870
Image 100 x 165, Plate 165 x 240, Sheet219 x 299 mm

Plate II from volume VII of the *'Geological Magazine'*, depicting the mineral Agate, a banded form of Chalcedony. Mineral shown in the process of transitioning from its Mural to Involute stage.

Condition: Light foxing to sheet.
[45180]
£45


FINGAL'S CAVE.
Staffa is one of a group of islands called the Hebrides, or Western Islands of Scotland. It is of an irregular oval shape; about a mile and a half across, and is a sort of table-land supported by cliffs of various heights. These cliffs are formed of a stone called basalt, which rises up to a great height, in the shape of lofty pillars. In many parts of the coast these pillars have yielded to the action of the sea, and caves have been formed of remarkable beauty.
The caves are most easily seen along the eastern side of the island; the surge, which constantly beats on the other side, rendering an approach difficult and dangerous. So beautiful and regular are these caves that they appear to have been built up by the hand of man; the lofty columns are like those of a cathedral, supporting a richly carved roof, adorned with various hues, while the ends of innumerable small columns of basalt give the ground the appearance of a translated pavement.
The most celebrated of these caves is that known as Fingal's Cave. The entrance is an irregular arch fifty-three feet broad and one hundred and seventeen feet high. The interior is two hundred and fifty feet in length. The sides are straight, and are divided into pillars, some of which, on the eastern side, are broken off near the base, and form a path to the farthest end. The rest of the floor is washed by a deep and often tumultuous sea. In fine weather boats can reach the farthest end of the cave, but with the least swell they are liable to be dashed to pieces. When the sea is boisterous, the waves rush to the farthest extremity with a deafening noise, hurling aloft volumes of spray, and flakes of foam. At the entrance end is a kind of natural throne, from which the spectator commands a fine view of that magnificent hall, which by its beautiful symmetry resembles, yet surpasses, the imitative efforts of man.
Sir Walter Scott says of this wonderful scene, "The stupendous columnar side walls—the depth and strength of the ocean, with which the cavern is filled—the variety of tints formed by stalactites dropping and petrifying between the pillars, and resembling a sort of chasing of yellow or cream-coloured marble, filling the interstices of the roof—the corresponding variety below, when the waves rolls over a reef, and in some places a violet coloured rock, the bases of the basaltic pillars—the dreadful noise of those stagnet billows, so well corresponding with the grandeur of the scene—are all circumstances elsewhere unparalleled." The same writer notices the cave in poetical language, thus:—
"Here, as to chaunt the vaughn duth'll
By skill of earthly artificer,
Nature herself, it seemed, would raise
A minster to her Maker's praise!
Not for a season nor a year,
But since the heavens and earth were,
Not a single night that clos'd and smil'd,
And each, between each orbid pause,
From the high vault an answer thunder
Its varied tone prolonged on high
That mocks the organ's melody.
Nor does its earliest dawn or verge
To old Ocean's holy dirge,
That Nature's voice might seem to say
'Wild hour these floods, this desert dell!
Thy heritage possess, that startle strangers
Vaunt it high and loud—but scream mine!'"
PUBLISHED UNDER THE DIRECTION OF THE COMMITTEE OF GENERAL LITERATURE AND EDUCATION, APPOINTED BY THE SOCIETY FOR PROMOTING CHRISTIAN KNOWLEDGE.
Price 3d. Plain; 6d. Coloured.
No. 8.]

CAVERNS.
Among the grand and beautiful features of the globe are caverns, or natural hollows in the solid crust of the earth, which are found of greater or less extent in most countries. Some of them are wide clefts in the rocks, which appear to have been torn asunder by some powerful agency; others form a series of grottoes, connected by passages; while a third sort admit daylight at both ends, and are frequently traversed by rivers. Some of these caverns are formed by the constant action of water on limestone or gypsum rocks; others are evidently due to volcanic agency. The immense size and extent of many natural caverns have caused them to be highly celebrated. The cave of Postumia in Norway is said to be eleven thousand feet deep. In the north-west of Georgia is a cave fifty feet high, and one hundred wide, which has been explored to the distance of several miles. Caverns are frequently observed in the most magnificent manner with stalactites and basaltic columns. Among these are the celebrated grotto of Antiparos in the Greek Archipelago, the entrance to which, as seen by torchlight, appears studded with diamonds and precious stones, and, in our own country, the cave of Fingal in Staffa, and the Peak cavern in Derbyshire. Some caverns exhale noxious vapours: the most remarkable example is that of the Grotto del Cane near Naples. Many caverns of volcanic origin exist in Iceland. The most remarkable of these is called Surtshellir or the Black Cavern. It is also called the Cave of the Robbers, from a tradition that it was formerly occupied by successive bands of robbers. It is situated towards the west of the island, in a valley which has been filled up with molten lava. The lava also rises to a considerable height on the side of the adjoining mountains, and the surface of the ground is covered with masses of the same substance broken and distorted into a thousand different forms.
The approach to the cavern is by a large chasm, formed by the falling in of the crust of lava. The mouth of the cavern appears as a dark opening; it is thirty-six feet high, and fifty-four feet wide, which dimensions the cavern retains for more than two-thirds of its length, which is upwards of five thousand feet. When Dr. Henderson visited this place, it was filled to a considerable height with snow, beyond which extended a rugged tract of large angular pieces of lava which had fallen from the vault. The darkness was so great, that with all the light afforded by two large torches, the cave could not be surveyed distinctly, yet beautiful black volcanic stalactites could be discerned hanging from the spacious vault. The sides of the cave had run into vitrified stripes, apparently formed by the flowing of the stream of lava. Further on in the cave were entrances to other subterranean passages of an immense size, which, it is supposed, had formed the asylum for banditti in ancient times. About ten feet from the bottom of the cave was a long stone wall, visibly made by the hand of man. Within its enclosure was a room of thirty feet in length, by fifteen feet in breadth, the floor of which was covered with the finest volcanic sand. This probably formed the sleeping-place of the inhabitants of the cave. The vault was hung with beautiful stalactites, reflecting the light in a splendid manner. One of the divisions of this cavern represented in the above view produces a very striking effect. It is an ice-grotto, and is thus described by Dr. Henderson: "the roof and sides of the cave were decorated with the most superb icicles, crystallised in every possible form, many of which exalted in magnificence the finest sculpture, while from the icy floor rose pillars of the same substance, assuming all the curious and fantastic shapes imaginable, and mocking the proudest specimens of art."
PUBLISHED UNDER THE DIRECTION OF THE COMMITTEE OF GENERAL LITERATURE AND EDUCATION, APPOINTED BY THE SOCIETY FOR PROMOTING CHRISTIAN KNOWLEDGE.
Price 3d. Plain; 6d. Coloured.
No. 7.]

40. Fingal's Cave

Josiah Wood Whymper
Wood engraving with original hand colouring
Published under the Direction of the Committee of General Literature and Education, Appointed by the Society for Promoting Christian Knowledge [c. 1849]
Image 168 x 240, Sheet 202 x 274 mm

Plate 8 from Josiah Wood Whymper's *'Thirty Plates Illustrative of Natural Phenomona, Etc.'* The plate depicts the entrance to Fingal's Cave, with curious tourists shown entering in a boat and clambering around it. Extensive explanatory text printed below.

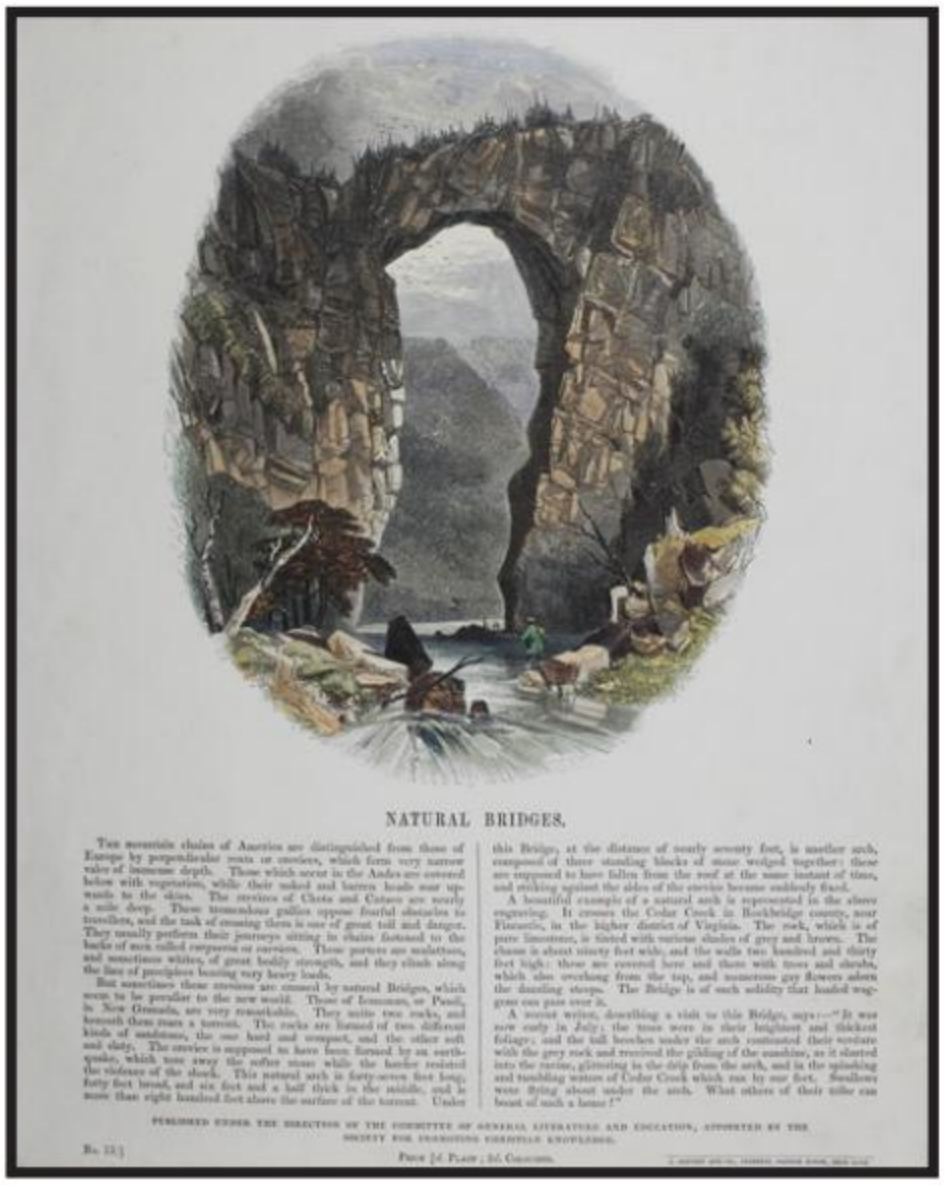
Condition: Some light time toning.
[45326]
£50

41. Caverns

Josiah Wood Whymper
Wood engraving with original hand colouring
Published under the Direction of the Committee of General Literature and Education, Appointed by the Society for Promoting Christian Knowledge [c. 1849]
Image 165 x 225, Sheet 200 x 278 mm

Plate 7 from Josiah Wood Whymper's *'Thirty Plates Illustrative of Natural Phenomona, Etc.'* The plate shows a group of gentlemen exploring a cavern, illuminated by a flaming torch. Extensive explanatory text printed below.

[45327]
£50



NATURAL BRIDGES.

The mountain chains of America are distinguished from those of Europe by perpendicular rents or crevices, which form very narrow vales of immense depth. Those which occur in the Andes are covered below with vegetation, while their naked and barren heads soar upwards to the skies. The crevices of Chiota and Cotaco are nearly a mile deep. These tremendous gullies oppose fearful obstacles to travellers, and the task of crossing them is one of great toil and danger. They usually perform their journeys sitting in chairs fastened to the backs of men called cargueros or carriers. These porters are mulattoes, and sometimes whites, of great bodily strength, and they climb along the line of precipices bearing very heavy loads.

But sometimes these crevices are crossed by natural Bridges, which seem to be peculiar to the new world. Those of Icononzo, or Pandi, in New Grenada, are very remarkable. They unite two rocks, and beneath them roars a torrent. The rocks are formed of two different kinds of sandstone, the one hard and compact, and the other soft and clayy. The crevice is supposed to have been formed by an earthquake, which tore away the softer stone while the harder resisted the violence of the shock. This natural arch is forty-seven feet long, forty feet broad, and six feet and a half thick in the middle, and is more than eight hundred feet above the surface of the torrent. Under this Bridge, at the distance of nearly seventy feet, is another arch, composed of three standing blocks of stone wedged together: these are supposed to have fallen from the roof at the same instant of time, and striking against the sides of the crevice became suddenly fixed.

A beautiful example of a natural arch is represented in the above engraving. It crosses the Cedar Creek in Rockbridge county, near Fincastle, in the higher district of Virginia. The rock, which is of pure limestone, is tinted with various shades of grey and brown. The chasm is about ninety feet wide, and the walls two hundred and thirty feet high: these are covered here and there with trees and shrubs, which also overhang from the top, and numerous gay flowers adorn the dazzling steeps. The Bridge is of such solidity that loaded waggons can pass over it.

A recent writer, describing a visit to this Bridge, says:—"It was now early in July; the trees were in their brightest and thickest foliage; and the tall beeches under the arch contrasted their verdure with the grey rock and received the gilding of the sunshine, as it slanted into the ravine, glimmering in the drip from the arch, and in the splashing and tumbling waters of Cedar Creek which run by our feet. Swallows were flying about under the arch. What others of their tribe can boast of such a home?"

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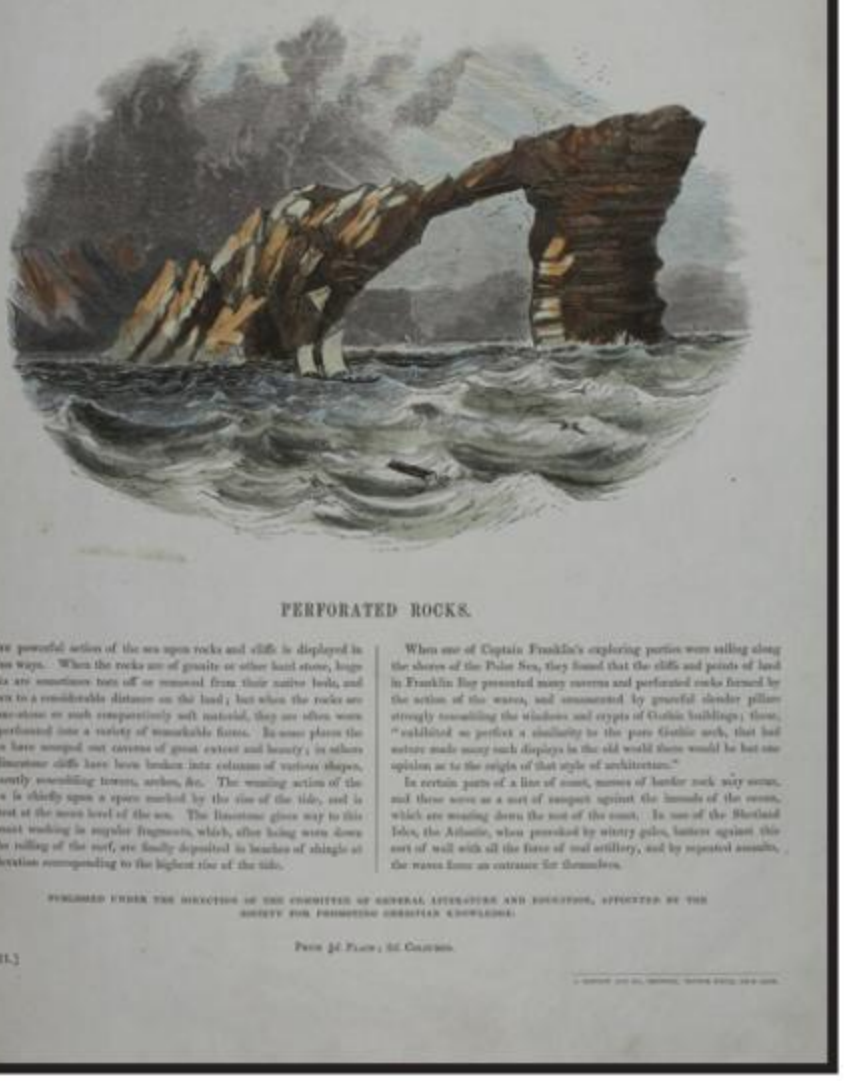
No. 13.]

PRICE 5d. PLAIN; 8d. COLOURED.



PERFORATED ROCKS.

The powerful action of the sea upon rocks and cliffs is displayed in various ways. When the rocks are of granite or other hard stone, huge blocks are sometimes torn off or removed from their native beds, and thrown to a considerable distance on the land; but when the rocks are of lime-stone or such comparatively soft material, they are often worn and perforated into a variety of remarkable forms. In some places the waves have scooped out caverns of great extent and beauty; in others the limestone cliffs have been broken into columns of various shapes, frequently resembling towers, arches, &c. The wearing action of the waves is chiefly upon a space marked by the rise of the tide, and is greatest at the mean level of the sea. The limestone gives way to this incessant washing in angular fragments, which, after being worn down by the rolling of the surf, are finally deposited in beaches of shingle at an elevation corresponding to the highest rise of the tide.

When one of Captain Franklin's exploring parties were sailing along the shores of the Polar Sea, they found that the cliffs and points of land in Franklin Bay presented many caverns and perforated rocks formed by the action of the waves, and ornamented by graceful slender pillars strongly resembling the windows and crypts of Gothic buildings; these, "exhibited so perfect a similarity to the pure Gothic arch, that had nature made many such displays in the old world there would be but one opinion as to the origin of that style of architecture."

In certain parts of a line of coast, masses of harder rock may occur, and these serve as a sort of support against the inroads of the ocean, which are wearing down the rest of the coast. In one of the Shetland Isles, the Atlantic, when provoked by wintry gales, batters against this sort of wall with all the force of real artillery, and by repeated assaults, the waves force an entrance for themselves.

PUBLISHED UNDER THE DIRECTION OF THE COMMITTEE OF GENERAL LITERATURE AND EDUCATION, APPOINTED BY THE SOCIETY FOR PROMOTING CHRISTIAN KNOWLEDGE.

PRICE 5d. PLAIN; 8d. COLOURED.

No. 21.]

42. Natural Bridges

Josiah Wood Whymper
Wood engraving with original hand colouring
Published under the Direction of the Committee of General Literature and Education, Appointed by the Society for Promoting Christian Knowledge [c. 1849]
Image 220 x 173, Sheet 241 x 278 mm

Plate 13 from Josiah Wood Whymper's *'Thirty Plates Illustrative of Natural Phenomona, Etc.'* The plate depicts a natural bridge, raised over the Cedar Creek in Rockbridge county, near Fincastle, Virginia. Extensive explanatory text printed below.

Condition: Time toning and very slight foxing.
[45323]
£45

43. Perforated Rocks

Josiah Wood Whymper
Wood engraving with original hand colouring
Published under the Direction of the Committee of General Literature and Education, Appointed by the Society for Promoting Christian Knowledge [c. 1849]
Image 153 x 208, Sheet 212 x 277 mm

Plate 21 from Josiah Wood Whymper's *'Thirty Plates Illustrative of Natural Phenomona, Etc.'* The plate depicts a ship sailing past a huge perforated rock, erosion from the sea having created an arch-like structure. Extensive explanatory text printed below.

Condition: Slight time toning.
[45317]
£50

PETRIFYING SPRINGS.

In volcanic regions, or in those where earthquakes have occurred at a comparatively recent date, springs are frequently loaded with mineral substances, which they abundantly deposit in their course. In many parts of Italy, the accumulation of chalky matter deposited by springs is so great, as to form rocks of much solidity and strength. The water which supplies the baths of San Filippo in Tuscany contains lime and magnesia, and has been known to deposit a solid mass thirty feet thick, in the course of twenty years. Extensive layers of this stony substance are found in the neighbourhood of the springs, reaching a mile and a quarter in length, the third of a mile in breadth, and in some places attaining a thickness of two hundred and fifty feet.

The more loose and porous rock resulting from such springs, generally contains incrusted plants and other substances, and is called *tufa*; the more compact is called *travertin*; and is quarried for building purposes. Many of the most splendid edifices in Rome are built of this stone.

The whole western part of Asia Minor is full of petrifying springs, and even the rivers are loaded with mineral substances. Where the ancient city of Hierapolis once stood, there is a remarkable mass of rock, formed by the tufa, or soft stone, which the springs deposit. This rock appears like an immense frozen cascade, and is, in fact, the petrifaction of falling waters. Dr. Chandler thus describes this Petrified Cascade:—"The view before us was so marvellous, that the description of it, to bear even a faint resemblance, ought to appear romantic. The vast slope which at a distance we had taken for chalk, was now beheld with wonder, it seeming an immense frozen cascade, the surface wavy, as of water at once fixed, or in its headlong course suddenly petrified. Round about us were many high, bare, stony ridges; and close by our tent one with a wide basis, and a slender rill of water, clear, soft, and warm, running in a small channel on the top." The whole region abounds with marks of volcanic action, and the waters have long been celebrated for their extraordinary petrifying powers. It is related that in order to make stone fences round the gardens and vineyards of Hierapolis, it was only necessary to conduct the water into narrow channels, and they soon became filled up with stone. Dr. Chandler found numerous ridges or fences thus formed, and even a road which appeared a wide and high causeway, proved to be a petrifaction.

PUBLISHED UNDER THE DIRECTION OF THE COMMITTEE OF GENERAL LITERATURE AND EDUCATION, APPOINTED BY THE SOCIETY FOR PROMOTING CHRISTIAN KNOWLEDGE.

No. 17.] PRICE ½d. PLAIN; 1d. COLOURED.

44. Petrifying Springs

Josiah Wood Whymper
Wood engraving with original hand colouring
Published under the Direction of the Committee of General Literature and Education, Appointed by the Society for Promoting Christian Knowledge [c. 1849]
Image 190 x 224, Sheet 225 x 277 mm

Plate 17 from Josiah Wood Whymper's *'Thirty Plates Illustrative of Natural Phenomona, Etc.'* The plate depicts a petrified spring. Extensive explanatory text printed below.

[45319]
£45

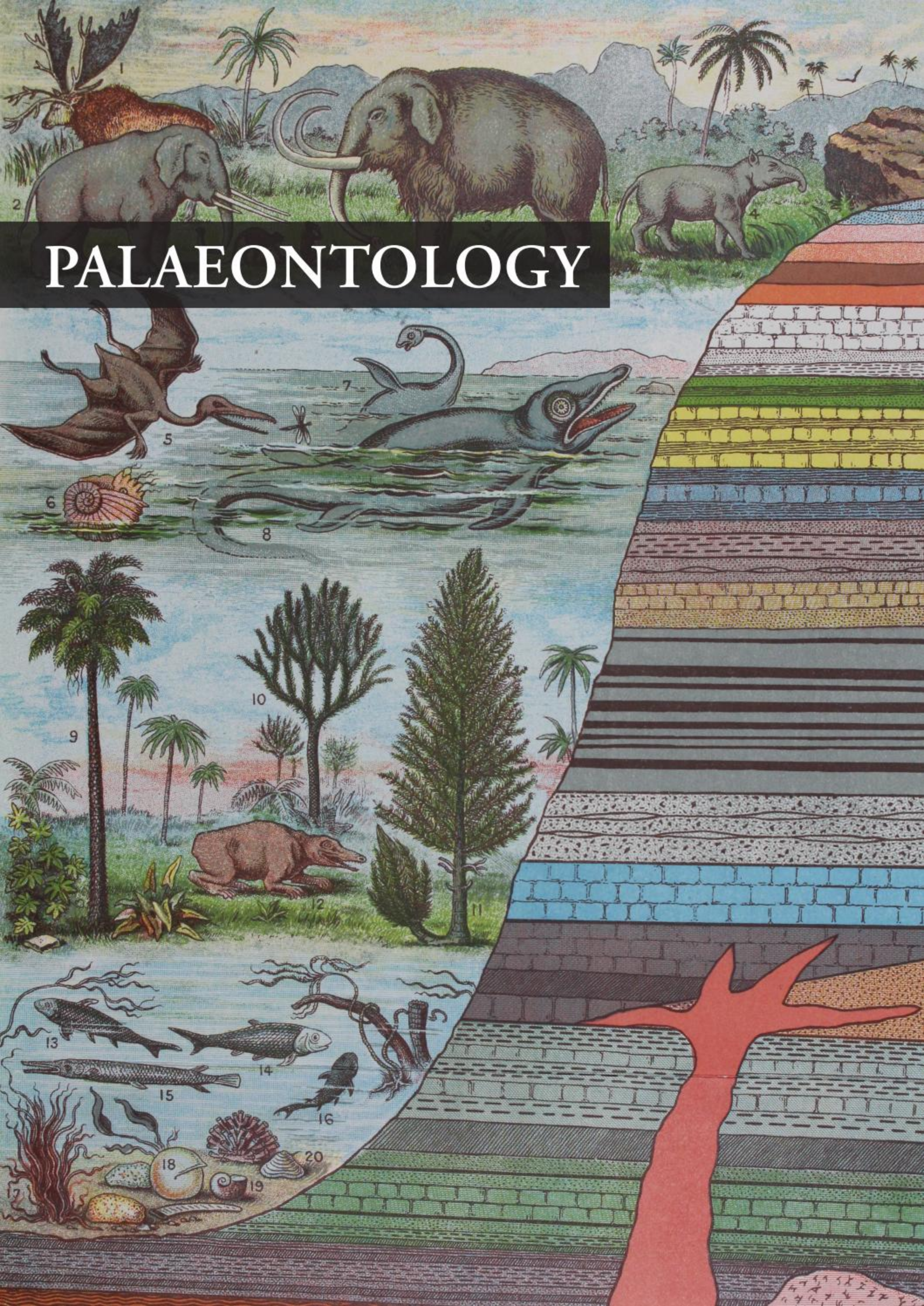
TE TARATA, NEAR ROTOMAHANA, NEW ZEALAND
BOILING CAULDRON WITH THE TERRACES OF SILICIOUS DEPOSITS
(AFTER HOCHSTETTER)

45. Te Tarata, near Rotomahana, new Zealand; boiling cauldron with the terraces of silicious deposits
after Ferdinand von Hochstetter
Chromolithograph
[c. 1888]
Image 120 x 200, Sheet 182 x 264 mm

A view of New Zealand's White Terrace or *'Te Tarata'*, a Maori word that translates as 'The Tattooed Rock'. It sat alongside *'Te Otukapuarangi'* ('The Pink Terrace'). The pair were reportedly the largest silica sinter deposits in the world. In 1859 Ferdinand von Hochstetter (1829-1884) carried out a topographic and geological survey of the Lake Rotomahana area. His survey produced enough data to form the first map of the area and to suggest how the terraces had been formed.

Condition: Minor foxing to upper right and around margin edges.
[45179]
£40

PALAEONTOLOGY



46. Les Sauriens de la période calcaire
[Anonymous]
Chromolithograph
[France, c. 1860]
Image 262 x 365, Sheet 320 x 402 mm

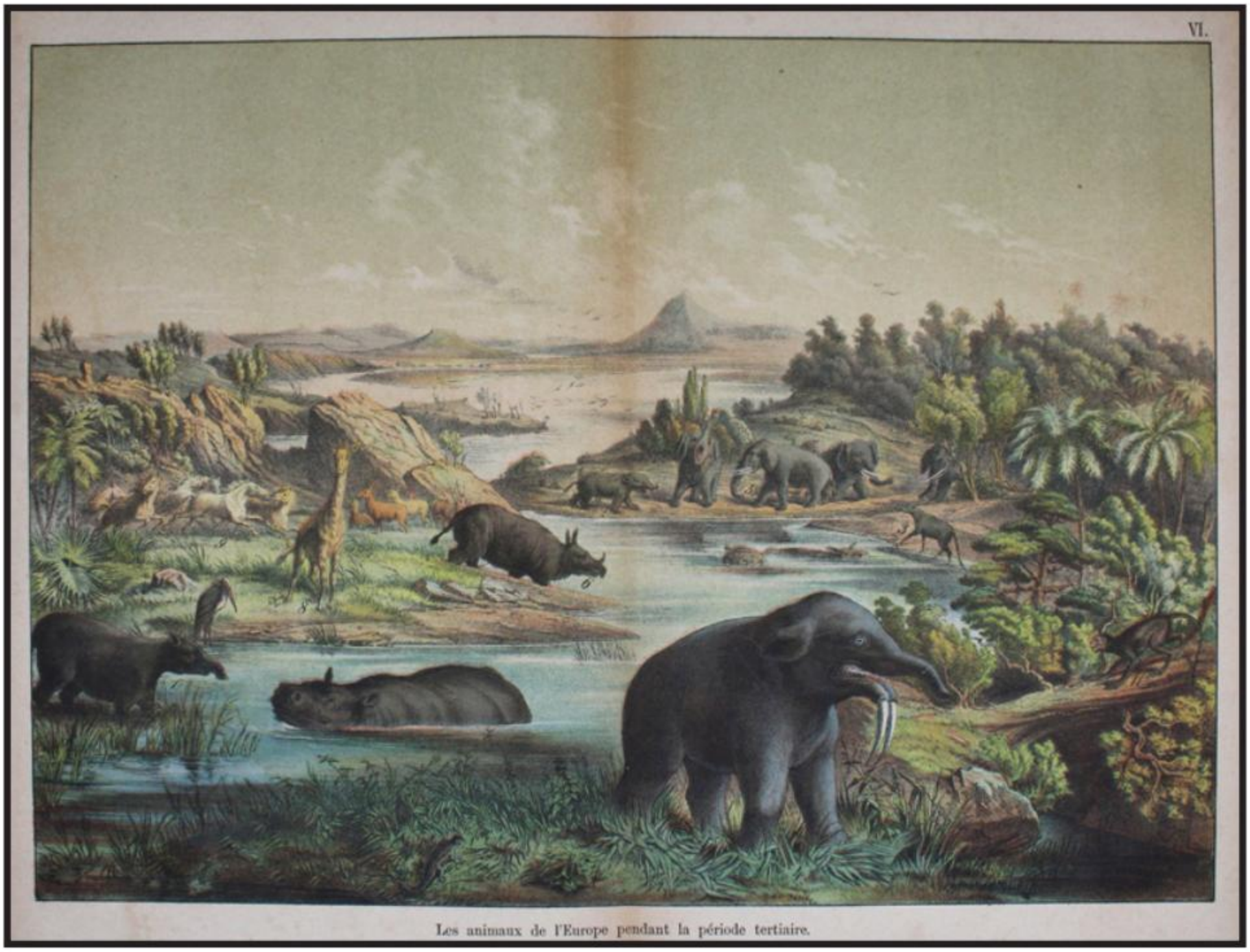
Dinosaurs and sea-creatures in the post Jurassic period. Plate V from a mid-nineteenth century French natural history publication.

Condition: Central vertical fold, as issued, toning to fold. Marginal tears.
[45331]
£275

47. Animaux et plantes de la période jurassique en Europe
[Anonymous]
Chromolithograph
[France, c. 1860]
Image 262 x 365, Sheet 320 x 402 mm

A prehistoric vista showing various Jurassic sea creatures and winged and feathered dinosaurs. Small islands dot the water, homing tropical looking trees and ferns. The Jurassic period was a geologic period that spanned 56 million years from the end of the Triassic period over 201 million years ago. Plate IV from a mid-nineteenth century French natural history publication.

Condition: Central vertical fold, as issued, toning to fold. Marginal tears.
[45330]
£275



48. Les animaux de l'Europe pendant la période tertiaire
[Anonymous]
Chromolithograph
[France, c. 1860]
Image 262 x 365, Sheet 320 x 402 mm

Animals of the Tertiary Period, a period lasting from approximately 66 million to 2.6 million years ago. Plate VI from a mid-nineteenth century French natural history publication.

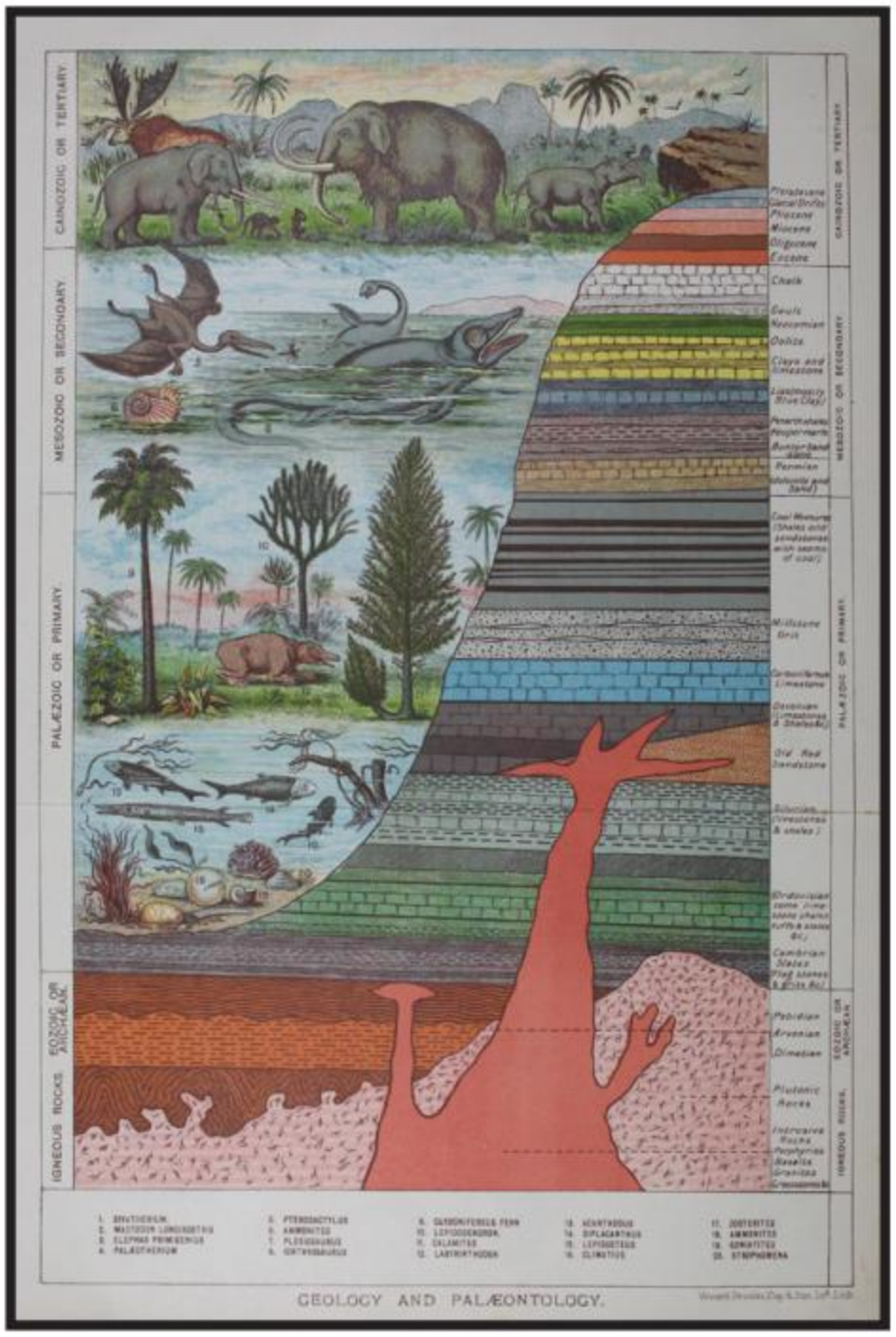
Condition: Central vertical fold, as issued, toning to fold. Marginal tears.
[45332]
£75

49. L'homme et les animaux du temps du déluge dans l'Europe centrale

[Anonymous]
Chromolithograph
[France, c. 1860]
Image 262 x 365, Sheet 320 x 402 mm

A Prehistoric scene showing a caveman fighting a large bear, while the woman behind him cowers in the cave. Wooly mammoths and bison can be seen in the background. Plate VII from a mid-nineteenth century French natural history publication.

Condition: Central vertical fold, as issued, toning to fold. Marginal tears.
[45333]
£75

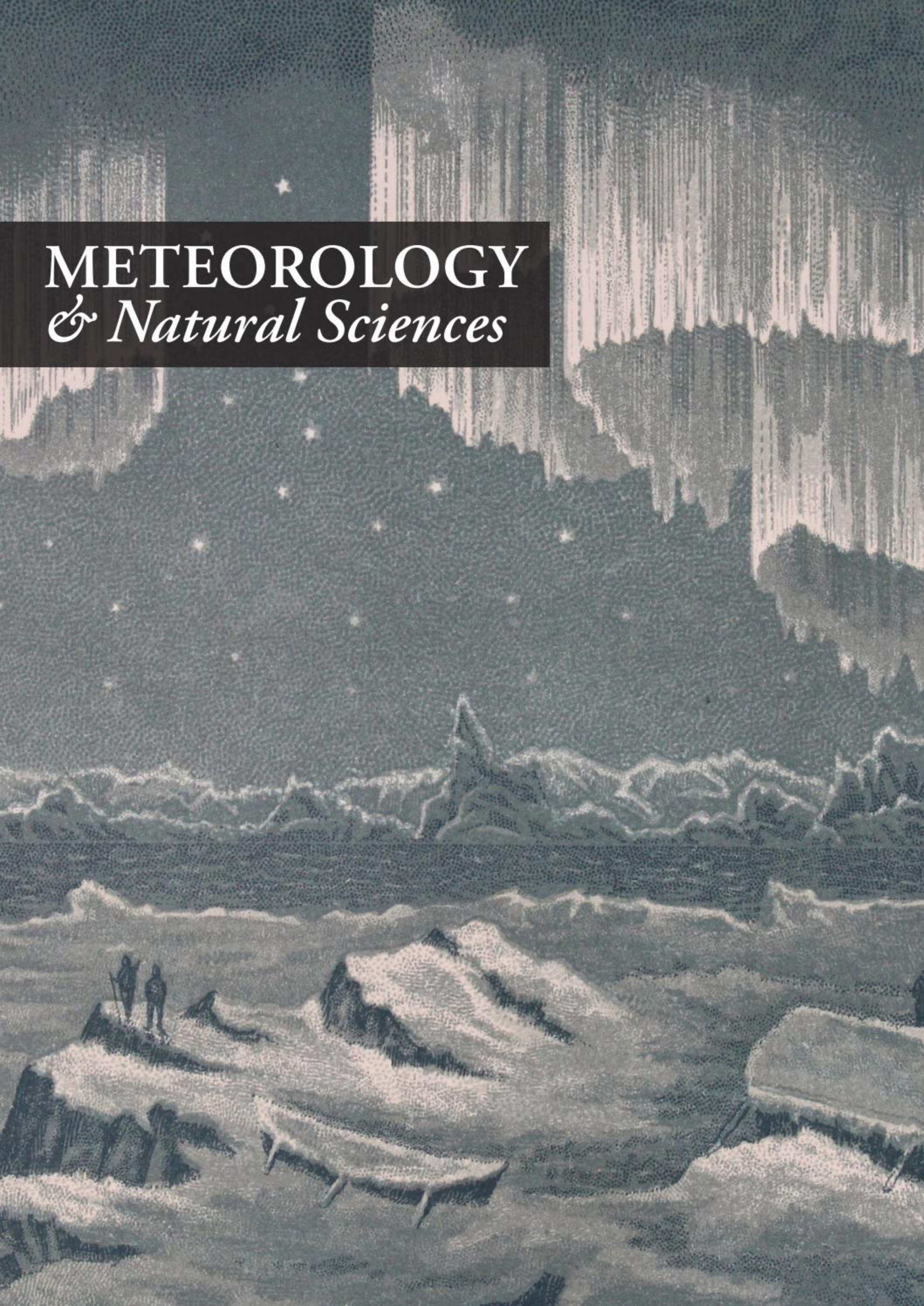


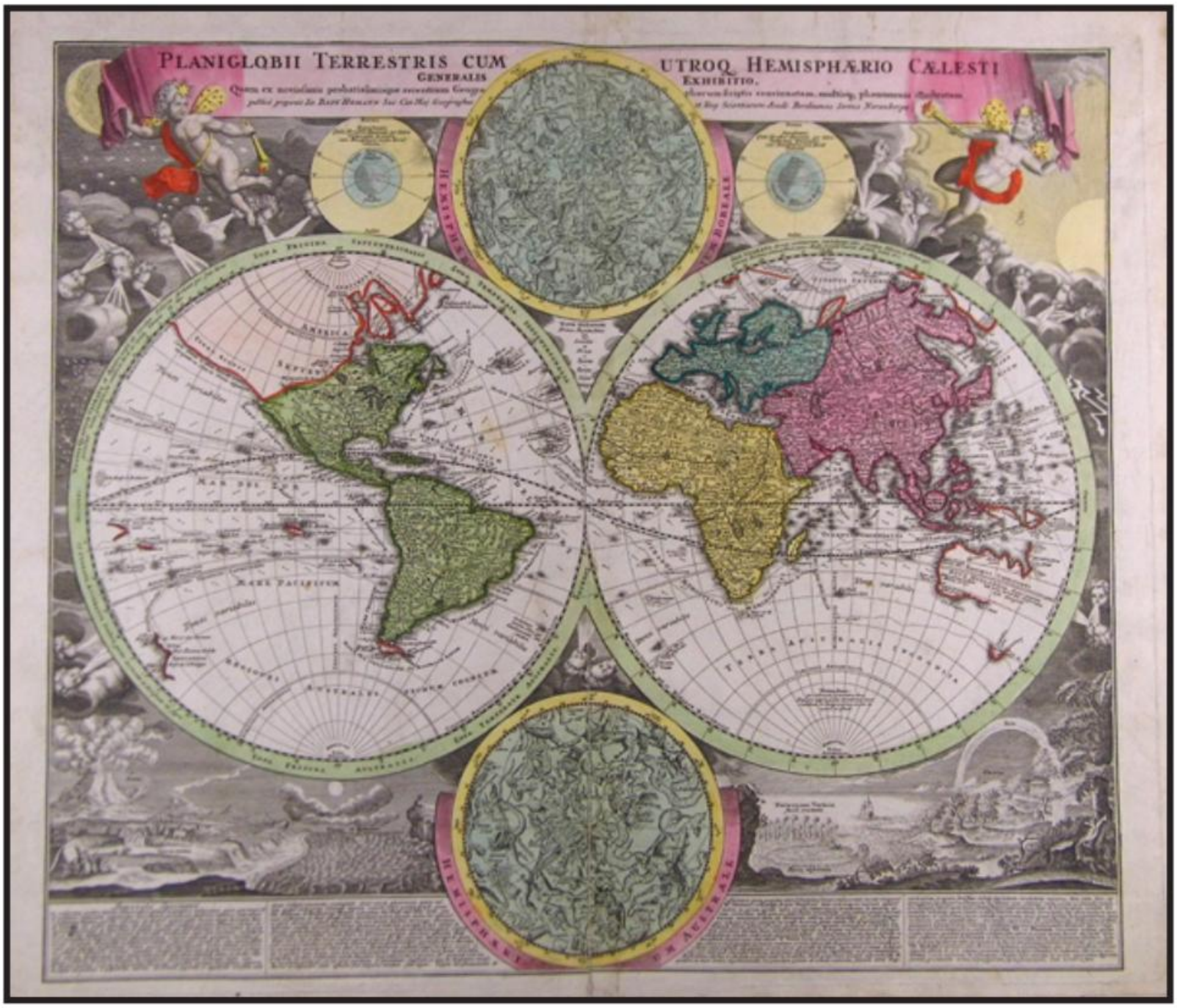
50. Geology and Palaeontology

[Anonymous]
Chromolithograph
Vincent Brooks, Day & Son Ltd. c. 1900
Image 285 x 188, Sheet 316 x 230 mm

A fascinating, colour printed, chart depicting the geological formation and paleontological evolution of the early world.
Condition: Two horizontal folds, as issued.
[45149]
£75

METEOROLOGY
& Natural Sciences





51. Planiglobii Terrestris Cum Utroque Hemisphaerio Caelesti Generalis Exhibitio : Quam ex novissimis probatissimisque Gallorum & Batavorum Tabulis concinnatam, multisque phaenomenis illustratam

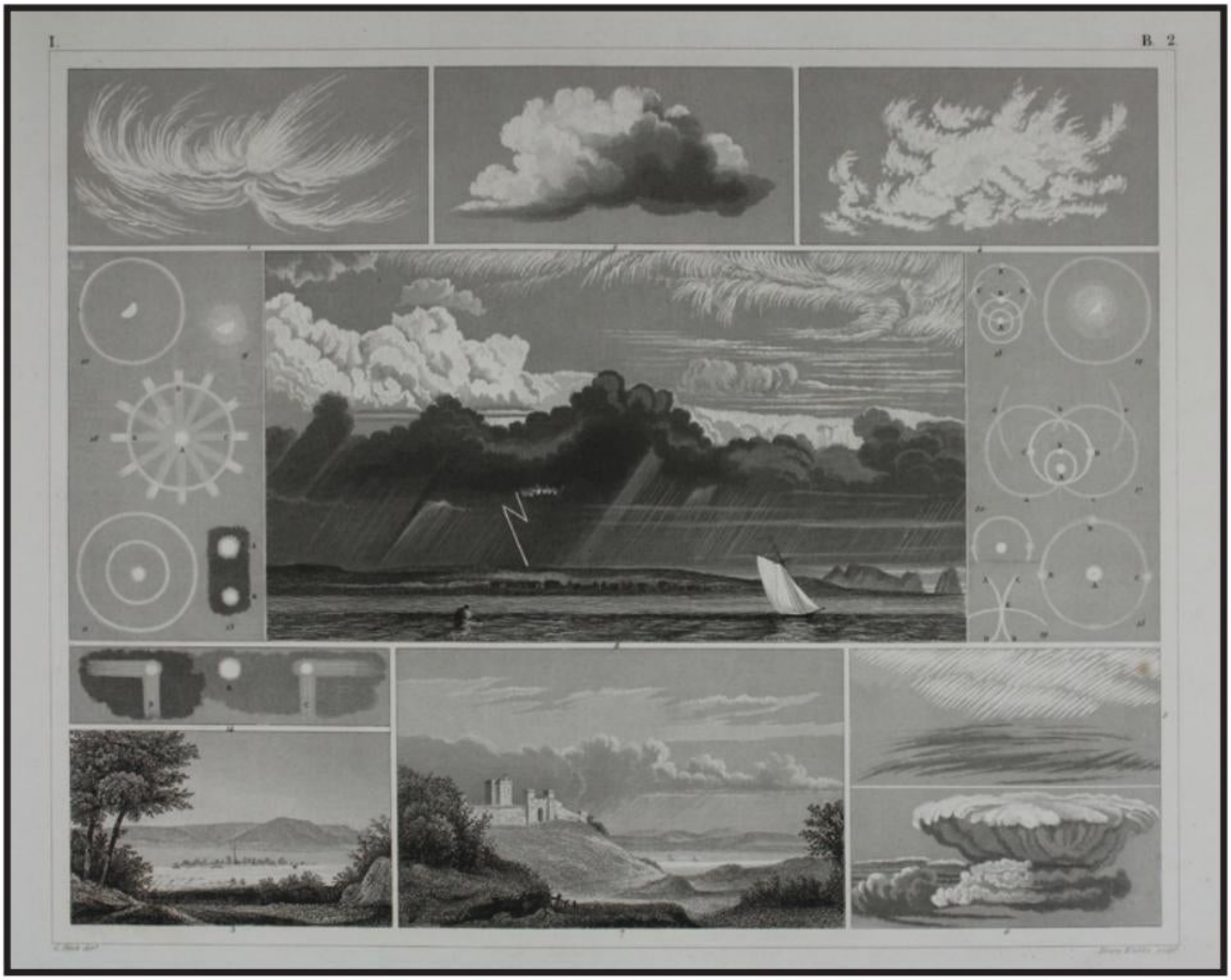
Homann, Johann Baptist
Copper engraved with original hand colour
c. 1720
480 x 545 mm

An elaborately adorned double hemisphere map of the world with celestial charts of the Northern and Southern hemispheres.

The background is illustrated with images of natural phenomena, including Mount Etna erupting, and the skies, weather, sun and moon above.

A descriptive panel at the bottom of the map, in Latin, describes the illustrations of volcanos, earthquakes, the tide, wind, geysers, whirlpools and rainbows.

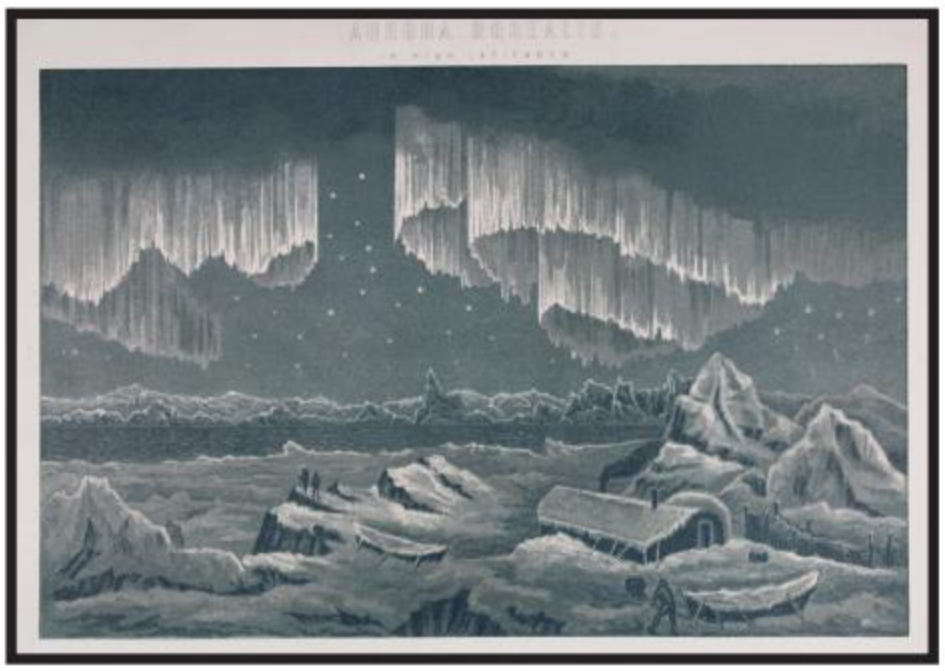
Condition: Pressed centre fold, as issued. Repaired split to bottom and to the right of centre fold. Small tears to margins, not affecting plate or map.
[42266]
£2,200



52. [Meteorology]
Henry Winkles
Steel engraving
[c. 1849]
Image 211 x 265, Sheet 238 x 305 mm

A plate from Johann Georg Heck's *'Iconographic Encyclopaedia of Science, Literature, and Art'*, first published in 1849. The page depicts a number of cloud formations, peculiar atmospheric refraction and three topographical views illustrating different weather systems.

[45184]
£40



53. Aurora Borealis in High Latitudes
[Anonymous]
Offset lithograph
[William Mackenzie, London, Edinburgh & Glasgow. 1885]
Image 133 x 204, Sheet 157 x 245 mm

A two-tone print showing the Aurora Borealis glowing over an icy landscape. Figures can be seen stood on the edge on an icy sea watching the natural phenomenon. A further figure pulls a boat along a snowy path, beside a wooden hut.

Originally published in *"The National Encyclopaedia. A Dictionary of Universal Knowledge by Writers of Eminence in Literature, Science and Art"*,

[45192]
£50

54. La Mer de Glace, Chamonix
Joseph Lemercier
Chromolithograph
F. Morel Md. d'estampes à Geneve . c. 1845
Image 89 x 121, Sheet 158 x 224 mm

A view of vast glacier 'La Mer de Glace' in Chamonix. Miniscule people and buildings can be seen to the right. The glacier is the largest of its kind in France, seven kilometres long and two hundred metres deep.

Condition: Slight time toning and wear to margins, not affecting image.
[45178]
£40

THE AURORA BOREALIS.
"The heavens declare the glory of God" (Ps. xix. 1); yet the most familiar appearances of the sky, beautiful as they are, scarcely awaken our attention, or lead our thoughts towards their Great Author. But when such a spectacle as that presented by the Aurora Borealis first breaks upon the sight, the most indifferent person must be led to reflect upon the wonder-working power of the Divine Hand.
The name given to this phenomenon signifies Northern Daybreak, and is very appropriate, because the Aurora usually appears in the north, and gives a light not unlike that of the dawn of day. It is sometimes seen in this country; but it is seldom brighter here than the light of a subdued twilight. In the regions of the north, and also at rare intervals in this country, it assumes a much more magnificent appearance, and presents a variety of majestic forms. Sometimes, from a focus of light there proceeds a multitude of bright and quivering beams, shooting upwards with great rapidity, and yielding a silvery radiance like that of the moon. Frequently a larger arch of light appears, accompanied at the same time by other smaller arches: these move towards each other, and suddenly unite in one splendid mass of radiance. Or, perhaps, one majestic slow-moving arch, of great beauty and effulgence, will suddenly break into countless masses of light, or into numerous smaller arches. Sometimes these arches are brightest towards their centres, at others they are most brilliant at their extremities.
The light of the Aurora is generally white and silvery, but it occasionally presents the beautiful colouring of the rainbow. In high northern latitudes it is usually white, steel-grey, or pale yellow; but when the sky is clear, or only thin films of cloud are visible, the colours are vivid and prismatic. In Baffin's Bay, the Aurora has been observed distinctly of red, orange, yellow, and green colours. In the north-east of Siberia it is particularly luminous, clothing the sky with a radiance resembling that of "gold, rubies, and sapphires." In Hudson's Bay the light of the Aurora is frequently equal to that of the full moon, while in Lapland and Sweden the light is still more brilliant, and nearly constant. In this beautiful phenomenon, therefore, the inhabitants of polar regions find a compensation for many of the discomforts and inconveniences of their dreary situation. Even in the Shetland Isles the Aurora is a frequent and welcome visitor. Under the title of "merry dancers," the inhabitants hail its appearance as giving beauty and cheerfulness to their long winter nights. It appears soon after the commencement of evening twilight, rising just above the horizon, without particular motion or effulgence, but after a time breaking forth into streams of brilliant light, and assuming every possible variety of form and colour: the stars are visible through the crossings of the Aurora, and they are not greatly dimmed in their lustre, unless the light is of remarkable brilliancy. Objects on the earth may also be observed through these transparent beams. A splendid Aurora was observed by Captain Parry actually shooting its beams between the observer and the land, the latter being only three thousand yards distant.
The cause of the Aurora has never been satisfactorily explained. It is, however, usually attributed to electricity, which, in its passage from the north pole to the equator, is supposed to become visible in this form. The beautiful imitation of the streamers of the Aurora, which can be obtained from the electrical machine, seems to favour this view; yet it is remarkable that the magnetic needle has never been visibly affected by the Aurora even in those countries where the phenomenon is the most splendid. This is still, therefore, one of those wonderful displays of Divine Power which we must admire, without being able, in the present state of our knowledge, to explain or understand. The Aurora has also been seen in high southern latitudes, but destitute of colour. In this situation it has been called Aurora Australis, or Southern Daybreak.
PUBLISHED UNDER THE DIRECTION OF THE COMMITTEE OF GENERAL LITERATURE AND EDUCATION, APPOINTED BY THE SOCIETY FOR PROMOTING CHRISTIAN KNOWLEDGE.
Price 3d. Plain; 6d. Coloured.
No. 2.]

55. The Aurora Borealis

Josiah Wood Whymper
Wood engraving with original hand colouring
Published under the Direction of the Committee of General Literature and Education, Appointed by the Society for Promoting Christian Knowledge [c. 1849]
Image 167 x 230, Sheet 197 x 277 mm

Plate 2 from Josiah Wood Whymper's *'Thirty Plates Illustrative of Natural Phenomona, Etc'* The plate depicts an Inuit being pulled across the ice on his sledge by a reindeer, the scene illuminated by a fantastic display of the Northern Lights. Extensive explanatory text printed below.

Condition: Slight time toning.
[45306]
£60

HALOS.
In certain states of the atmosphere, chiefly occurring in Polar Regions, the sun and moon are surrounded with circles and parts of circles of various sizes and forms, producing the most singular and remarkable effects. All these appearances are called *halos*. The small halos seen round the sun and moon in fine weather, when the sky is partially covered with light fleecy clouds, are also called *corona*. Sometimes the image of the sun or moon is repeated several times, producing what are called *parhelia*, or mock-suns, and *paraselenæ*, or mock-moons.
A few years ago a beautiful exhibition of parhelia occurred in the northern parts of America. The atmosphere had been very hazy, but as the heat was cleared off the first appearance was a brilliant parhelion. "Its form at first was nearly circular, and its apparent diameter a little greater than that of the true sun. Its light, which was of a brilliant white, was so intense as to pain the eyes. In a few moments, another parhelion, of equal brightness, appeared at the same distance on the east side of the sun, and at the same altitude. When first seen it appeared a little elongated vertically, and slightly coloured. Both these parhelia retained their size and appearance for a few moments, and then began to lengthen in a vertical direction, and show the prismatic colours with considerable brilliancy. Directly above the sun appeared, at the same time with the parhelia, a coloured arc, having its centre in the zenith, and its concavity towards the sun. The exterior was red; the other colours were mingled into each other, but the blue and green were predominant, though faint."
Paraselenæ are frequently seen in the Polar Regions. Captain Parry noticed several of these during the long winter nights of those dreary climes. On the 1st December, 1819, he remarked one close to the horizon; another perpendicularly above it; and two others on a line parallel to the horizon. "Their shape was like that of a comet, the tail being from the moon. The side towards the moon was of a light orange colour. During the existence of these mock-moons, a halo, or luminous ring, appeared round the moon, and passed through all the mock-moons, of which instant two yellowish coloured lines joined the opposite mock-moons and formed four quadrants, bisecting each other at the centre of the circle. These appearances varied in brightness, and continued about an hour." On another occasion a circular halo surrounded the moon: part of a well defined circle of white light passing through the moon, extended for several degrees on each side of her, and in points where this circle intersected the halo were paraselenæ. In the part of the halo immediately over the moon was another much brighter, and opposite to it in the lower part of the circle another similar but much more faint. About the same time on the following evening two concentric circles were observed round the moon, upon the inner of which were four paraselenæ exhibiting the colours of the rainbow. On another evening he saw a halo which had in it three paraselenæ, very luminous, but not tinged with prismatic colours, and on the following day the same phenomena occurred with the addition of a vertical stripe of white light proceeding from the upper and lower limbs of the moon, and forming, with a part of the horizontal circle seen before, the appearance of a cross. There was also at times an arc of another circle touching the halo, which sometimes almost reached to the zenith, changing the intensity of its light, very frequently not unlike the Aurora Borealis.
In former ages such appearances produced great terror; but their cause is now known. In cold regions, the vapour of the atmosphere being frozen, innumerable particles of ice, of an angular form, fill the air, and reflect and sometimes decompose the rays of the sun and moon. In the Arctic Regions, at the time when halos are most frequently seen, the particles of floating ice prick the skin like needles, and raise blisters on the face and hands. In temperate regions halos are only observed during cold weather, and in the Torrid Zone they never occur; the cold not being sufficient to freeze the vapour of the atmosphere.
PUBLISHED UNDER THE DIRECTION OF THE COMMITTEE OF GENERAL LITERATURE AND EDUCATION, APPOINTED BY THE SOCIETY FOR PROMOTING CHRISTIAN KNOWLEDGE.
Price 3d. Plain; 6d. Coloured.
No. 11.]

56. Halos

Josiah Wood Whymper
Wood engraving with original hand colouring
Published under the Direction of the Committee of General Literature and Education, Appointed by the Society for Promoting Christian Knowledge [c. 1849]
Image 180 x 220, Sheet 187 x 274 mm

Plate 11 from Josiah Wood Whymper's *'Thirty Plates Illustrative of Natural Phenomona, Etc.'* The plate depicts groups of Polar explorers watching a halo effect around the moon. Extensive explanatory text printed below.

Condition: Slight time toning.
[45305]
£60

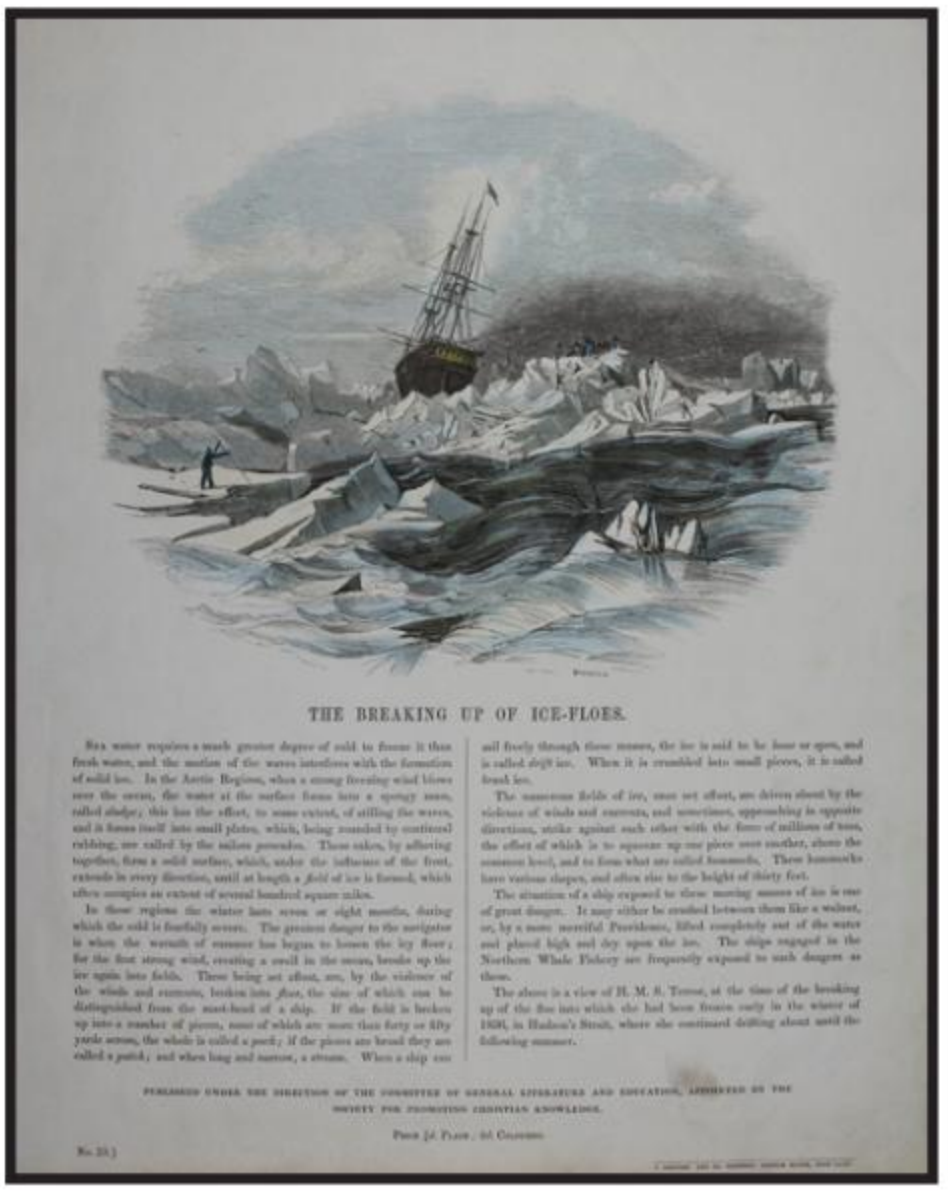
ICEBERGS.
PUBLISHED UNDER THE DIRECTION OF THE COMMITTEE OF GENERAL LITERATURE AND EDUCATION, APPOINTED BY THE SOCIETY FOR PROMOTING CHRISTIAN KNOWLEDGE.

57. Icebergs

Josiah Wood Whymper
Wood engraving with original hand colouring
Published under the Direction of the Committee of General Literature and Education, Appointed by the Society for Promoting Christian Knowledge [c. 1849]
Image 181 x 232, Sheet 195 x 278 mm

Plate 6 from Josiah Wood Whymper's *'Thirty Plates Illustrative of Natural Phenomona, Etc.'* The plate depicts a magnificent arctic iceberg illuminated by the night sky. Two boats progress around it. Extensive explanatory text printed below.

Condition: Slight time toning. Staining to right.
[45309]
£60

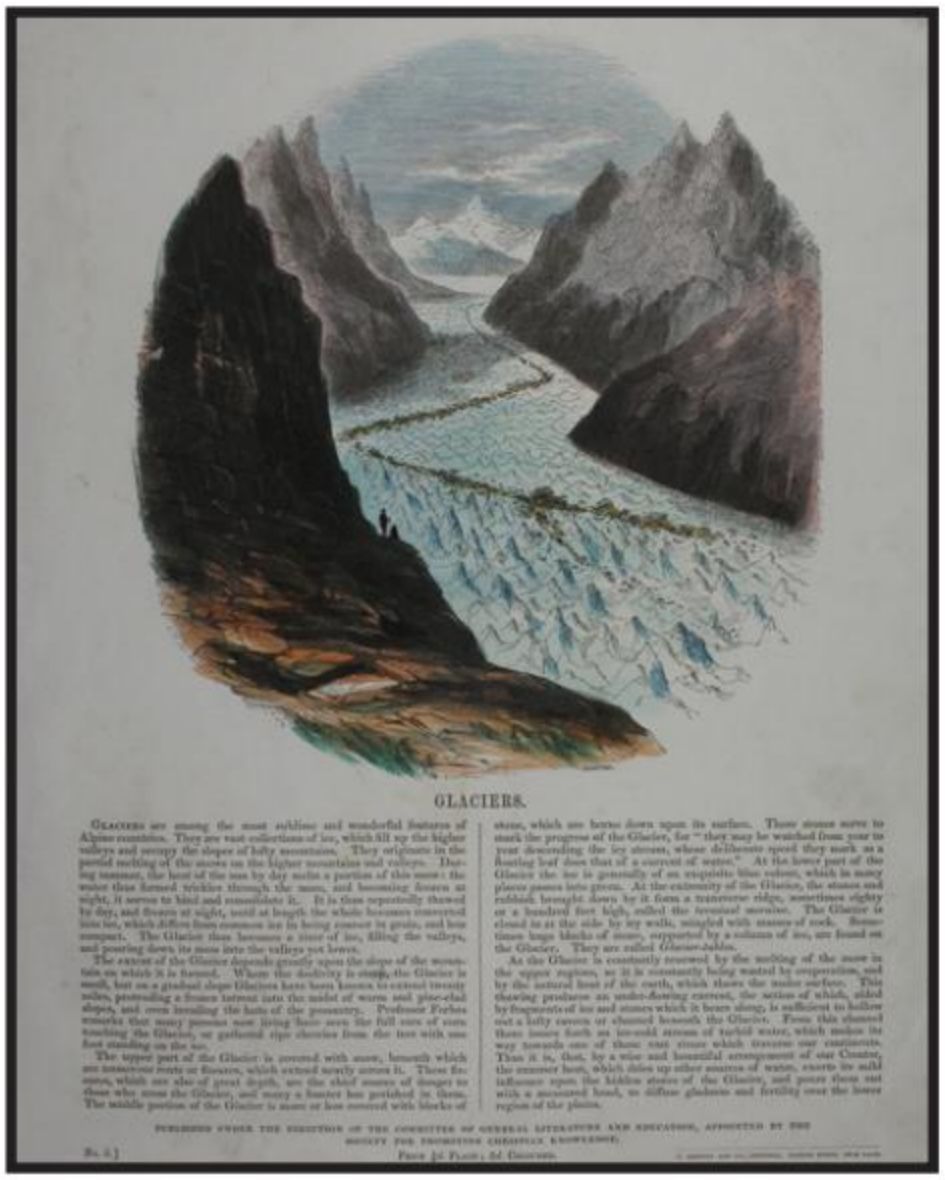

THE BREAKING UP OF ICE-FLOES.
PUBLISHED UNDER THE DIRECTION OF THE COMMITTEE OF GENERAL LITERATURE AND EDUCATION, APPOINTED BY THE SOCIETY FOR PROMOTING CHRISTIAN KNOWLEDGE.

58. The Breaking Up of Ice-Floes

Josiah Wood Whymper
Wood engraving with original hand colouring
Published under the Direction of the Committee of General Literature and Education, Appointed by the Society for Promoting Christian Knowledge [c. 1849]
Image 175 x 215, Sheet 190 x 276 mm

Plate 23 from Josiah Wood Whymper's *'Thirty Plates Illustrative of Natural Phenomona, Etc'* The plate depicts H.M.S. Terror frozen in the Hudson Strait in 1836. Extensive explanatory text printed below.

Condition: Slight time toning. Staining to right.
[45308]
£60



59. Glaciers

Josiah Wood Whymper
Wood engraving with original hand colouring
Published under the Direction of the Committee of General Literature and Education, Appointed by the Society for Promoting Christian Knowledge [c. 1849]
Image 213 x 193, Sheet 234 x 278 mm

Plate 5 from Josiah Wood Whymper's *'Thirty Plates Illustrative of Natural Phenomona, Etc.'* The plate depicts two figures looking out across a glacial valley. Extensive explanatory text printed below.

Condition: Slight time toning.
[45307]
£50

60. Glacier Tables

Josiah Wood Whymper
Wood engraving with original hand colouring
Published under the Direction of the Committee of General Literature and Education, Appointed by the Society for Promoting Christian Knowledge [c. 1849]
Image 175 x 210, Sheet 214 x 278 mm

Plate 22 from Josiah Wood Whymper's *'Thirty Plates Illustrative of Natural Phenomona, Etc.'* The plate depicts a mountaineer viewing a slab of stone perched upon a number of huge stems of ice. Extensive explanatory text printed below.

Condition: Slight time toning and paper buckling. Some foxing to upper right.
[45302]
£50

AVALANCHES.

In all countries where the mountains rise to a great height, and are covered with snow, the fall of avalanches occurs more or less frequently. These terrible and destructive phenomena consist of immense masses of ice or snow which suddenly descend from the upper parts of mountains into the valleys beneath with amazing velocity, and with such resistless force that every thing is swept away before them, even whole forests and villages when such occur in their course.

There are several different kinds of avalanches to which distinct names are given by the inhabitants of the Alps. Those most commonly seen by tourists are ice avalanches, or portions of glaciers giving way under the influence of the summer's sun. When seen from a distance, these masses of ice, breaking into smaller fragments against the rocks as they fall, resemble rushing cataracts, and are accompanied by a similar thundering noise. Such avalanches mostly fall in uninhabited districts, and are seldom fatal in their effects; they occur only during summer, but are very frequent at that season.

Earlier in the year, avalanches of a more dangerous character fall with considerable regularity, sliding down habitual channels which become perfectly smooth from the friction which they thus undergo from time to time. These regular avalanches are eagerly expected by the peasants as the sure tokens of the commencement of Spring. But circumstances which cannot be foreseen will sometimes divert these avalanches from their usual course, or cause them to fall unexpectedly. They consist of masses of compact snow and ice, which are yet clammy and adhesive, so that the traveller may be crushed or suffocated in a moment. The masses are sometimes of enormous extent, covering meadows and forests with a thick layer of snow, which the heat of two or three summers is scarcely sufficient to melt. The instantaneous fall of these *snowy avalanches* may overwhelm a village in the night without the inhabitants being aware of the calamity which has befallen them. Such was the case in 1749, when the village of Bucens, in the Canton of the Grisons, was buried, and at the same time removed from its site. The inhabitants, on awaking in the morning, could not imagine why daylight did not appear. One hundred of these unfortunate villagers were dug out of the snow, sixty of whom were still alive, the hollows in the snow having contained air enough to support life in the more robust among them.

Another kind of avalanche, and the most destructive of all, is the *drift avalanche*, which takes place in winter after a very heavy fall of snow. Violent gusts of wind detach large masses of snow from the heights where they have accumulated: these, falling on the lower declivities, force off other masses, so that a volume of loose snow of immense extent is accumulated and rent with astonishing force into the valleys beneath. These avalanches are greatly dreaded, not more for their own violence, than for that of a *rush of air* which accompanies them, and is occasioned by them, and which has been known to carry destruction to a considerable distance on either side of the falling masses. This rush of air is powerful enough to overturn trees and houses, and even to split rocks asunder. These drift avalanches have been known to descend, with amazing rapidity, a distance of at least ten miles. Such are the sublime displays of power, which impress with awe and reverence the mind of the mountain traveller.

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No. 26.]

61. Avalanches

Josiah Wood Whymper
Wood engraving with original hand colouring
Published under the Direction of the Committee of General Literature and Education, Appointed by the Society for Promoting Christian Knowledge [c. 1849]
Image 170 x 212, Sheet 182 x 277 mm

Plate 26 from Josiah Wood Whymper's *'Thirty Plates Illustrative of Natural Phenomona, Etc'* The plate depicts a torrential rush of snow with a tiny figure flailing on a cliff to the lower left. Extensive explanatory text printed below.

Condition: Slight time toning. Light diagonal crease to top right corner.
[45312]
£50

SNOW-BRIDGES.

In ascending snowy mountains, the traveller frequently passes over immense fields of ice, called *glaciers*. These abound in cracks or fissures, which he has to cross over or to travel round, in his laborious journey. Sometimes the glacier is rent almost from side to side, and the chasm thus formed, becomes the receptacle of avalanches or enormous masses of ice and snow, which fall from the upper regions of the mountain. In their fall these masses occasionally become lodged half in, half out of the chasm, and thus form a bridge by which it may be crossed. Travellers who have reached the summit of Mont Blanc, describe the crevices in the upper regions of that mountain as most singular, awful, and sublime spectacles. Approaching cautiously the edge of one of these yawning chasms, those who have sufficient steadiness of nerve may look down on a gulf of unknown depth, whose lower parts are clouded in darkness, but whose sides display all the magnificence of icy crystallization, the smooth walls being covered with a net-work of hoar-frost, more delicate than gauze, and more varied than hangings of damask; while round the edge of the chasm frequently hang the most superb icicles, clear as crystal.

In the ascent to Mont Blanc is a valley or frozen lake, called the Grand Plateau, enclosed on three sides by mountains, and on the other by glaciers. A wide chasm separating the glacier from the Plateau has to be crossed by travellers, the means of communication being an immense mass of snow, which has become lodged in the crevice, and which serves the purpose of a bridge. Our engraving represents this remarkable bridge, and a party of travellers who had the boldness to make that dangerous situation their resting place, and even breakfasted on the bridge. One of them (Mr. Ashlin) thus describes the scene:—"While breakfast was preparing I could not resist the temptation of wandering along the edge of the crevice on the Plateau side. The depth of it was immense; its great breadth affording me an opportunity of a more accurate and perfect examination than I had had before. The layers of ice forming the glacier, varying in colour from deep bluish-green to a silvery whiteness, with myriads of long clear icicles hanging from all the little breaks in the crevice, presented a scene of the greatest beauty. From this point I had a view immediately under our bridge: the manner in which it hung suspended, with all the guides sitting on it, many hundred feet from the bottom of this stupendous chasm, was a beautiful and curious, but at the same time an appalling sight. In one moment, without a chance of escape, the fall of the bridge might have precipitated them into the gulf beneath. Yet no such thought ever entered the imagination of my thoughtless but brave guides, who sat at their meal singing and laughing, either unconscious or regardless of the danger of their present situation."

In the awful solitudes of these mountains, the traveller feels almost oppressed with the sense of his own insignificance. He seems a mere atom, a speck in creation, and he turns with renewed gratitude to that revelation which assures him of the merciful regard of the Framer of all these wonders, who does not overlook the meanest objects, and without whom not even a sparrow falleth to the ground.

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No. 15.]

62. Snow-Bridges

Josiah Wood Whymper
Wood engraving with original hand colouring
Published under the Direction of the Committee of General Literature and Education, Appointed by the Society for Promoting Christian Knowledge [c. 1849]
Image 190 x 200, Sheet 220 x 278 mm

Plate 15 from Josiah Wood Whymper's *'Thirty Plates Illustrative of Natural Phenomona, Etc.'* The plate depicts a group of mountaineers making the perilous journey over the glacial bridge connecting two sides of an icy chasm, on the Grand Plateau of the ascent of Mont Blanc. Extensive explanatory text printed below.

Condition: Light dirt build-up to right margin.
[45301]
£50

CORAL-REEFS.

Some parts of the ocean are studded with a peculiar kind of rock, very narrow, but stretched out to a considerable length. It is called a *Coral-reef*, and is produced by innumerable small zoophytes popularly called *Coral-insects*. The Coral-insect consists of a little oblong bag of jelly closed at one end, but having the other extremity open, and surrounded by tentacles or feelers, usually six or eight in number, set like the rays of a star. Multitudes of these minute animals unite to form a common stony skeleton called *Coral*, or *Madrepore*, in the minute openings of which they live, protruding their mouths and tentacles when under water, but suddenly drawing these into their holes when danger approaches. These animals cannot exist at a greater depth in the sea than about ten fathoms, and as the Coral islands often rise with great steepness from a sea more than three hundred fathoms deep, it would seem that a great alteration must have taken place in the depth of the ocean since the time when the little architects commenced their labours. Their mode of working is, to build up pile upon pile of their rocky habitations, until at length the work rises to such a height that it remains almost dry at low water. A solid rocky base being thus formed, sea-shells, fragments of coral, sea-hedge-hog-shells, and prickles, are united by the burning sun and the evaporating salt-waters into a solid stone, which gradually increases in thickness, till it becomes so high that it is covered only by the spring tides. The heat of the sun so penetrates the mass of stone when it is dry, that it splits in many places, and breaks off in flakes. These flakes are raised by the active surf, and thrown, with sand and shells of marine animals, between and upon the boundless stones, where they offer to the seeds of trees and plants, cast up by the waves, a soil upon which they rapidly grow, overshadowing the dazzling white surface. Trunks of trees, carried by rivers from other countries and islands, find here, at length, a resting-place; with these come small animals, such as lizards and insects, as the first inhabitants; sea-birds nestle there; decayed land-birds take refuge in the bushes; and at a much later period man also appears, and builds his hut on the fruitful soil.

Reefs are of various forms. In some places they occur at a great distance from the land, and run nearly parallel with it: these are called *barrier-reefs*, and are often of enormous dimensions. Usually a snow-white line of great breakers, with here and there an islet crowned by cocoa-nut trees, separates a broad channel of smooth water from the waves of the open sea. In other places *Coral-reefs fringe* the shore, and are separated from it by a narrow channel of moderate depth: these are called *fringing* or *shore-reefs*.

But perhaps the most remarkable form of reef is that to which the term *Lagoon-Island* has been applied. In this case the reef approaches the form of a circle; and, surrounding a part of the sea, produces a sheet of smooth water called a *lagoon*, or *lake*, within which are usually several smaller islands. From this circumstance the word *island*, as applied to the whole, has been objected to, and the term *atoll* substituted, which is the name given to these circular groups of Coral islets by the inhabitants of the Indian Ocean.

"Every one," says Mr. Darwin, "must be struck with astonishment when he first beholds one of those vast rings of Coral rock, often many leagues in diameter, here and there surmounted by a low verdant island with dazzling white shores, bathed on the outside by the foaming breakers of the ocean, and on the inside surrounding a calm expanse of water, which, from reflection, is of a bright but pale green colour. The naturalist will feel this astonishment more deeply after having examined the soft and almost gelatinous bodies of these apparently insignificant creatures, and when he knows that the solid *reef* surmounts only on the outer edge, which, day and night, is lashed by the breakers of an ocean never at rest."

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No. 12.] Price 3d. Plain; 5d. Coloured.

63. Coral-Reefs

Josiah Wood Whymper
Wood engraving with original hand colouring
Published under the Direction of the Committee of General Literature and Education, Appointed by the Society for Promoting Christian Knowledge [c. 1849]
Image 170 x 220, Sheet 209 x 277 mm

Plate 12 from Josiah Wood Whymper's *'Thirty Plates Illustrative of Natural Phenomona, Etc.'* The plate depicts two ships in the calm waters inside the coral reef close to a tropical island. Extensive explanatory text printed below.

Condition: Light dirt build-up to right margin.
[45300]
£50

THE DROPPING WELL.

Spring-water, even that which is the most transparent, generally contains certain mineral substances, gathered from the soil through which the water flows. These substances are often so completely dissolved as to leave the water clear and sparkling, while they add to its wholesome qualities, and also render it agreeable to the taste.

It is owing to these mineral substances that many springs have the property of petrifying objects, that is, covering them entirely with a stony crust, which makes them appear as if changed into stone. Such springs are seen in several parts of our own country; but far more strikingly in foreign lands, in the neighbourhood of volcanoes. The Dropping Well at Knaresborough, in Yorkshire, is one of our most noted petrifying springs. It rises at the foot of a limestone rock on the south-west bank of the river Nidd, opposite to the ruins of Knaresborough Castle. After running about twenty yards towards the river, it spreads itself over the top of a cliff, from whence it trickles down in a number of places, dropping very fast, and making a tinkling sound in its fall. The spring is supposed to send forth twenty gallons of water every minute, and while in rapid motion, the fine particles in which it abounds are carried forward, or very slightly deposited; but as it approaches the cliff, or rocky elevation above named, it moves with a gentle current, becomes languid in its pace, and then deposits abundantly on grass, twigs, stones, &c., a petrifying substance which renders them exceedingly beautiful. The cliff is about thirty feet high, forty-five feet long, and from thirty to forty broad, having started from the main bank, upwards of a century ago, leaving a chasm of two or three yards wide. The water is carried over this chasm by an aqueduct; but there is sufficient waste to form beautiful petrifactions in the hollow. Small branches of trees, roots of grass, and other objects, are incrusted with spar, and, together with pillars of the same substance, like stalactites, fringing the banks, form an interesting sight. The top of the cliff is covered with plants, flowers, and shrubs, such as ash, elder, ivy, geranium, wood-anemone, lady's-mantle, cowslips, wild angelica, meadow-sweet, &c. Pieces of moss, bird's nests containing eggs, and a variety of other objects, are exhibited to visitors, as proofs of the petrifying qualities of the water. The weight of the water is twenty-four grains in a pint heavier than that of common water. The top of the cliff projects considerably beyond the bottom, and the water is thus thrown to some distance from the side of the cliff, which is of a concave form.

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No. 19.] Price 3d. Plain; 5d. Coloured.

64. The Dropping Well

Josiah Wood Whymper
Wood engraving with original hand colouring
Published under the Direction of the Committee of General Literature and Education, Appointed by the Society for Promoting Christian Knowledge [c. 1849]
Image 172 x 190, Sheet 220 x 275 mm

Plate 19 from Josiah Wood Whymper's *'Thirty Plates Illustrative of Natural Phenomona, Etc.'* The plate depicts the Dropping Well at Knaresborough, in Yorkshire, a cave over which petrified leaves and branches drip a constant stream of water into the pool below. Extensive explanatory text printed below.

Condition: Slight time toning and minor foxing.
[45321]
£45

65. The Falls of Niagara

Josiah Wood Whymper
Wood engraving with original hand colouring
Published under the Direction of the Committee of General Literature and Education, Appointed by the Society for Promoting Christian Knowledge [c. 1849]
Image 217 x 180, Sheet 240 x 275 mm

Plate 9 from Josiah Wood Whymper's *'Thirty Plates Illustrative of Natural Phenomona, Etc.'* The plate depicts the Niagara Falls, the scale of which are exemplified by the miniscule figures below. Extensive explanatory text printed below.

Condition: Some light time toning.
[45325]
£50

66. The Fata Morgana

Josiah Wood Whymper
Wood engraving with original hand colouring
Published under the Direction of the Committee of General Literature and Education, Appointed by the Society for Promoting Christian Knowledge [c. 1849]
Image 170 x 230, Sheet 212 x 278 mm

Plate 24 from Josiah Wood Whymper's *'Thirty Plates Illustrative of Natural Phenomona, Etc.'* The plate depicts the rare reflective phenomenon that is known to take place in the straits of Messina, the mirage appears between Sicily and the coast of Italy. Extensive explanatory text printed below.

Condition: Slight time toning. Light diagonal crease to top right corner.
[45310]
£45

THE RAINBOW.
Beheld yon bright ethereal Bow,
With evanescent beauties glow;
The spacious arch streams through the sky,
Deck'd with each tint of Nature's dye;
Refracted sunbeams, through the showers,
A humid radiance from it pour;
Whilst colour into colour fades,
With blended lights and softening shades.
The Rainbow is one of the most beautiful appearances in nature, and is visible when the sun is shining brightly in one part of the heavens, while at the same time a shower is falling in the opposite direction. The observer placing himself with his back to the sun, sees on the rain-clouds opposite a majestic arch brightening into the most lovely colours, blended in perfect harmony. While he is yet gazing, if there be much rain, another arch appears, exterior to the first but fainter in colour. Both arches exhibit the same series of colours, namely, red, orange, yellow, green, blue, indigo, and violet; but their arrangement is different, for while in the inner arch the lower edge is violet and the upper red, in the outer arch the lower edge is red and the upper violet.
The cause of this beautiful phenomenon is to be found in the fact, that the light of the sun is made up of three colours, namely, red, yellow, and blue. In passing through the drops of rain, these colours are separated, and bent more or less, from the usual straight direction of the sun's rays. Some of the colours, however, admit of being bent more than others; the blue is bent out of its course more than the yellow, and this again more than the red, and thus the colours appear separately. These colours, by mingling together, form the other tints of the Rainbow. A similar cause produces the colours of dew-drops, which often appear like differently-coloured gems sparkling among the grass.
When the rain-cloud is of small extent, only a part of the bow is visible: when the clouds encompass a large portion of the sky, a perfect bow appears. Sometimes, indeed, the bow may be traced across a portion of blue sky, or it may apparently rest upon the ground. In the former case, there are vapours in the air of too light a nature to be visible to the naked eye, but sufficient to reflect and reflect the rays of light; in the latter, the drops of rain adhering to the grass and foliage produce the same effect. When seen in the greatest perfection, the Rainbow appears as a perfect semicircle, and it cannot exceed this unless the spectator be on elevated ground. In mountainous and stormy regions, rainbows are often seen to great advantage.
Rainbows are sometimes produced by the moon as well as by the sun; but these lunar Rainbows are generally white, cloudy, or greyish, and very seldom exhibit the colours of the solar rainbow. A coloured bow similar to that produced by rain is sometimes seen in the spray of a fountain or of a waterfall, and also in mists that lie low upon the ground.
The beauty of this phenomenon is not the only reason why we should look upon it with great interest. The Rainbow was appointed by God himself as the sign of the covenant of mercy, made with Noah and with all mankind after the Flood. The words in which this declaration was made to mankind are recorded in the Book of Genesis, chapter ix. v. 11 to 16.
PUBLISHED UNDER THE DIRECTION OF THE COMMITTEE OF GENERAL LITERATURE AND EDUCATION, APPOINTED BY THE SOCIETY FOR PROMOTING CHRISTIAN KNOWLEDGE.
No. 1.]

67. The Rainbow

Josiah Wood Whymper
Wood engraving with original hand colouring
Published under the Direction of the Committee of General Literature and Education, Appointed by the Society for Promoting Christian Knowledge [c. 1849]
Image 188 x 225, Sheet 210 x 276 mm

Plate 1 from Josiah Wood Whymper's *'Thirty Plates Illustrative of Natural Phenomona, Etc.'* The plate depicts a beautiful illustration of a rainbow arching over a church and houses. The dark cloud has been juxtaposed with the bright sun cutting through the rain. Extensive explanatory text printed below.

Condition: Slight time toning and light creases, repairs to left and right margins.
[45329]
£45

THE GEYSERS, OR BOILING SPRINGS OF ICELAND.
Iceland is an island situated in the Northern Ocean, amid regions of ice and snow; yet it gives abundant evidence of the volcanic fires which are slumbering beneath its surface. Among the remarkable features of this interesting island are its hot springs, which, in some places, throw up a column of water to the height of a hundred feet, accompanied by a tremendous noise. These springs abound in many parts of the coast, as well as in the interior of the island, and, in some cases, the waters of the ocean are sensibly heated by their action. The most celebrated of these hot springs are the Geysers, situated in the north of the island, where within the space of a few acres more than fifty of them may be seen. Some emit hot water as clear as crystal; others send out hot vapours and troubled waters.
The great Geyser, which has attracted most attention, rises from a mound of flinty earth, deposited by the water to the height of about thirty feet, and extending about two hundred feet across. On the top of this mound is the basin, sixty feet wide, and seven feet deep, in the centre of which is the pipe or opening through which the water rises. The basin and pipe are lined with the same flinty deposit, polished to great smoothness by the constant action of the water; but on the outside of the basin the deposit forms beautiful groups of crystals greatly resembling cauliflowers. Small eruptions of the Geyser take place every two or three hours, but the great eruption occurs only once in about thirty hours. This is preceded by a hollow rumbling sound, and many thundering explosions which cause the ground to quiver violently. Suddenly a vast body of water rises with a fluctuating motion to the height of eighty or ninety feet, accompanied by a thick pillar of vapour. From the principal column smaller veins jet out to a much greater height, while others stream in arches from the cloud of vapour. Much of the beauty of the column is concealed by the steam, but when this is blown aside by the wind, the water appears shooting upwards in innumerable rays, "spreading out at the top like a lofty pine, and descending in fine rain." The column often descends suddenly, as if its force were exhausted: but it again rises with renewed energy, accompanied by thunders rolling in the earth. The whole eruption continues about ten minutes.
Some of these natural fountains play for a much longer time than the great Geyser, and also send their waters to such a height that they become dissipated in fine spray. The body of water is not so great, but the force of the eruption is quite as remarkable. Large stones thrown in for the amusement of travellers, are projected to such a height as to be nearly lost sight of ere they fall back again into the basin. The flinty matter which these springs deposit causes the eruptions to vary constantly in force and character, and in time destroys the spring by entirely choking up the tube from which the water rises. Immediately after an eruption, the water in the basin is near the boiling point, and lower down in the tube it is said to be forty degrees hotter than boiling water. These Geysers are supposed to be caused by the collection of heated vapours in large cavities of the earth, which at length acquire sufficient force to expel the waters subject to their pressure. The word *Geyser* signifies in the Icelandic dialect "*fury*."
Thus amid the wildness and desolation of Icelandic scenery, the simple inhabitants have abundant opportunity of recognising in these magnificent fountains, and in the awful grandeur of volcanoes and volcanic remains, the constant presence and mighty power of their Creator.
PUBLISHED UNDER THE DIRECTION OF THE COMMITTEE OF GENERAL LITERATURE AND EDUCATION, APPOINTED BY THE SOCIETY FOR PROMOTING CHRISTIAN KNOWLEDGE.
No. 3.]

68. The Geysers, or Boiling Springs of Iceland

Josiah Wood Whymper
Wood engraving with original hand colouring
Published under the Direction of the Committee of General Literature and Education, Appointed by the Society for Promoting Christian Knowledge [c. 1849]
Image 190 x 230, Sheet 210 x 277 mm

Plate 3 from Josiah Wood Whymper's *'Thirty Plates Illustrative of Natural Phenomona, Etc.'* The plate depicts the Icelandic geysers. Extensive explanatory text printed below.

Condition: Light dirt build-up to right margin.
[45304]
£60

WATER SPOUTS.

THE Ocean presents inexhaustible subjects of contemplation to those who delight to trace the wonderful works of God. "They that go down to the sea in ships, that do business in great waters; these see the works of the Lord, and his wonders in the deep. For he commandeth and raiseth the stormy wind, which lifteth up the waves thereof." (Ps. cvii. 23, 24, 25.) Among the most striking phenomena connected with the ocean are Water Spouts, or sea-whirlwinds, of magnificent appearance. The first symptom of their occurrence is, generally speaking, a violent disturbance of the sea immediately below some dark cloud. Throughout a space perhaps of a hundred yards diameter, the waves are whirled round with great rapidity, and tend strongly towards a centre, at which there is quickly accumulated a large mass of water or aqueous vapour, which rises with a spiral movement in a conical shape towards the cloud. At the same time there is formed in the clouds above a similar cone, but in an inverted position. These two cones gradually approach each other, and at length unite; they are, however, not stationary, but are carried to and fro by the wind, and sometimes burst asunder with a loud noise. While the sea and sky are thus united, the appearance is remarkably grand, the whole column being of a light colour near its axis, but dark along the sides, thus giving it a hollow appearance. The course of the sea water in the interior can sometimes be distinctly seen, moving along the column as smoke up a chimney. The spout is often formed and broken up several times successively in the same spot, the agitation and boiling of the waters continuing the whole time. The danger to ships is imminent, for no vessel coming within the vortex of the waters could possibly escape. Captain Beechey thus describes the narrow escape of his vessel off Clermont Tonnere, near the Gambier Islands. "The Water Spout approached us amid heavy rain, thunder and lightning, and was not seen until it was very near the ship. As soon as we were within its influence a gust of wind obliged us to take in every sail, and the topsails, which could not be furled in time, were in danger of splitting. The wind blew with great violence, momentarily changing its direction, as if it were sweeping round in short spirals. The rain, which fell in torrents, was also precipitated in curves with short intervals of cessation. Amidst this thick shower, the Water Spout was discovered extending in a tapering form from a dense stratum of cloud to within thirty feet of the water, where it was hid by the foam of the sea, being whirled upwards with a tremendous gyration. It changed its direction after it was first seen, and threatened to pass over the ship, but being diverted from its course by a heavy gust of wind, it gradually receded. On the dispersion of this magnificent phenomenon we observed the column to diminish gradually, and at length to retire to the cloud from whence it had descended."

Water Spouts are sometimes formed from the clouds alone, without communication with the sea. One of these, which appeared in France, is stated to have emitted a strong smell of sulphur, while flashes of lightning proceeded from it, and also a great quantity of water. In 1718 a Water Spout burst in Lincolnshire, and at the place where it fell the ground was torn up to the extent of about half a mile in length, and to the depth of seven feet, so as to lay bare the surface of the rock underneath. The visible portion of Water Spouts varies in height from two thousand to six thousand feet. The size and colour of the column also greatly vary. The lowest portion of these seems at sea has been observed from 100 to 1000 feet in diameter; the middle is sometimes not more than two or three feet. The larger the columns, the longer they endure. They do not generally last more than half an hour, during which time they move along at an uncertain rate. Sometimes they have passed over thirty-seven English miles in one hour; at other times a person on foot can easily follow them. These spouts have also a motion of greater or less rapidity on their own axes. When the motion is violent they have power enough to tear up large trees, move heavy cannon, and wrench off the roofs of houses. Small objects have been carried twenty miles, and a fish-pond has been emptied in an instant.

Water Spouts are always attended with electrical action, and in many cases light, noise, and a sulphurous smell accompany them. Yet they do not affect the magnetic needle in ships, even when they actually pass over the vessel. The phenomenon closely resembles, if it is not identical with, the whirlwind, which, in arid plains and deserts, raises pillars of sand and dust of a form very similar to that which is in this case formed by water.

PUBLISHED UNDER THE DIRECTION OF THE COMMITTEE OF GENERAL LITERATURE AND EDUCATION, APPOINTED BY THE SOCIETY FOR PROMOTING CHRISTIAN KNOWLEDGE.

No. 4.] PRICE 1d. PLAIN; 2d. COLOURED.

69. Water Spouts

Josiah Wood Whymper
Wood engraving with original hand colouring
Published under the Direction of the Committee of General Literature and Education, Appointed by the Society for Promoting Christian Knowledge [c. 1849]
Image 185 x 225, Sheet 200 x 275 mm

Plate 4 from Josiah Wood Whymper's *'Thirty Plates Illustrative of Natural Phenomona, Etc.'* The plate depicts the phenomena of water spouts, otherwise known as sea-whirlwinds. These are swirling spouts of water that rise up into the air on stormy seas. Extensive explanatory text printed below.

Condition: Slight time toning. Slight creasing and surface marking.
[45328]
£50

WHIRLPOOLS.

THE waists of a river, or of the sea, are in some places obstructed by banks, rocks, or islands, or by winds and currents, and thus acquire a circular or spiral motion, forming what is called a *whirlpool*.

The above engraving represents one of the most celebrated whirlpools, that of Charybdis, in the Straits of Messina, between Italy and Sicily. The water is agitated in several different places at the same time within circular spaces, some of which, when the wind is moderate, extend one hundred feet across. This agitation is produced by the wind setting in a sloping direction upon the rapid current which sets in from the north during six hours, and from the south during the next six hours, and so on alternately; the changes taking place with the rising and setting of the moon. During a light wind a boat can be rowed over the spot without danger, though it will be much tossed by the waves; but when the wind is high, the swelling of the waves is more violent and extensive, so that small vessels driven within the limits of the whirlpool may be sunk by the waves breaking over them, and large ones may be driven on the Italian shore, and wrecked on the rock of Scylla. Thus it is often said of persons in difficult and dangerous circumstances, that they are between Scylla and Charybdis. The dashing of the waves on the hollow rocks about Cape Peloro produces a noise which is said to be like that of the barking of dogs, whence probably arose the fable that a monster surrounded by ferocious dogs devoured the mariners who might be wrecked on this coast.

The Maelstrom on the coast of Norway, between the islands of Moskoe and Worse, is a whirlpool of a similar kind, the dangers of which seem to have been much exaggerated. The tide there forms a current which runs with violence alternately from north to south and from south to north, and when this is met by a strong wind, a great agitation of the waves and a whirlpool is formed, the roaring of which is heard at the distance of many miles. At such a time vessels keep at a distance, in order to avoid being drawn into the current. Whales, seals, and other fish, when caught within its eddies, are dashed on the shores by the violence with which the waters rush through the channel. In moderate weather, at high and at low water, ships pass through the strait without danger.

Among the Orkney Islands several small whirlpools, capable of whirling round a boat, are to be seen. But it is said that a log of wood, or a bundle of straw, thrown into the water, is sufficient to stop the revolving motion of many of these, after which boats can pass over in safety. The whirlpool of Corrywrekan in the narrow channel between Scarba and Jura in the Western Islands, is caused by a conical rock rising abruptly from the bottom, where the depth is six hundred feet, and reaching to within 90 feet of the surface. This obstruction in a winding rocky channel produces a succession of eddies, and when the flood tide sets in, with a fresh breeze in the opposite direction, the eddying waters rise in short heavy waves, which are very dangerous to boats, and even to decked vessels.

When the rotatory movement is rapid the centre of the whirlpool is the most depressed portion, and objects drawn within it are sunk at that point.

Small whirlpools or eddies are not uncommon in rivers where the banks are very winding, or the bed much contracted. They are also formed about the piers of a bridge when the river is so much contracted as to cause its surface above the bridge to be much higher than the surface below. When the bed is of unequal depth vertical whirlpools are occasioned by the reflection of the water from the ascending slopes.

Whirlpools sometimes do great damage in rivers by loosening the piles driven for the foundation of dams; and by lifting up earth and stones, and thus undermining the piers.

PUBLISHED UNDER THE DIRECTION OF THE COMMITTEE OF GENERAL LITERATURE AND EDUCATION, APPOINTED BY THE SOCIETY FOR PROMOTING CHRISTIAN KNOWLEDGE.

No. 28.] PRICE 1d. PLAIN; 2d. COLOURED.

70. Whirlpools

Josiah Wood Whymper
Wood engraving with original hand colouring
Published under the Direction of the Committee of General Literature and Education, Appointed by the Society for Promoting Christian Knowledge [c. 1849]
Image 152 x 205, Sheet 187 x 278 mm

Plate 27 from Josiah Wood Whymper's *'Thirty Plates Illustrative of Natural Phenomona, Etc.'* The plate depicts the whirlpool Charybdis, in the Straits of Messina. Extensive explanatory text printed below.

Condition: Slight time toning.
[45314]
£50

COMPARATIVE CHARTS
& Geological Maps

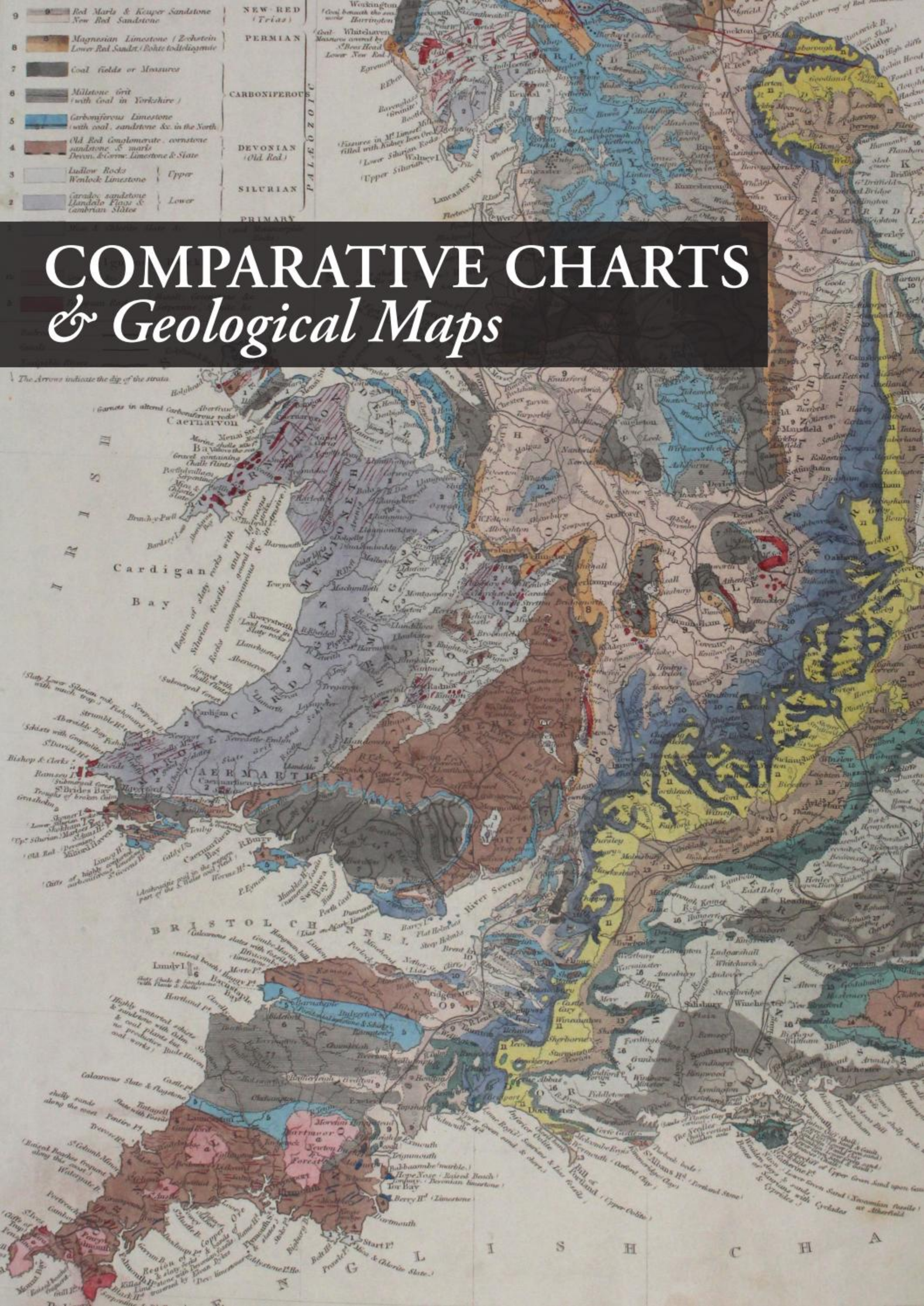

9 Red Marls & Keuper Sandstone / New Red Sandstone — NEW RED (Trias)
8 Magnesian Limestone (Zechstein / Lower Red Sandst. (Rothe todtliegende — PERMIAN
7 Coal fields or Measures
6 Millstone Grit (with Coal in Yorkshire) — CARBONIFEROUS
5 Carboniferous Limestone (with coal, sandstone &c. in the North)
4 Old Red Conglomerate, cornstone, sandstone & marls / Devon. & Corne. Limestone & Slate — DEVONIAN (Old Red)
3 Ludlow Rocks / Wenlock Limestone — Upper
2 Caradoc sandstone / Llandeilo Flags & Cambrian Slates — Lower — SILURIAN
PRIMARY
PALEOZOIC
The Arrows indicate the dip of the strata
Caernarvon
Cardigan Bay
IRISH SEA
BRISTOL CHANNEL
River Severn
ENGLISH CHANNEL

TABLEAU PITTORESQUE DES MERVEILLES DE LA NATURE
PAR PERROT, INGÉNIEUR GÉOGRAPHE.
PARIS, chez BASSET Edr. Md. d'ESTAMPES, RUE DE SEINE N° 33.

71. Tableau Pittoresque des Merveilles de la Nature

Aristide Michel Perrot
Aquatint and engraving
Paris, chez Basset Edr. Md. d'Estampes, Rue de Seine
No. 33. c. 1840
Image 439 x 589, Sheet 470 x 653 mm

An unusual chart depicting 58 numerically identified natural and man-made wonders occurring throughout the world. Chart includes mountains, glaciers, volcanoes, geysers, icebergs and prehistoric fossils. These fossils include a mammoth skeleton and an ichthyosaur, alongside depictions of early man and both extinct and still living creatures.

A numbered table at the bottom of the sheet names and describes each wonder. Smaller editions of this chart were published in a number of atlases, but large format editions like this are much rarer.

Condition: Ink stain to top right margin, not affecting image.
[45147]
£800

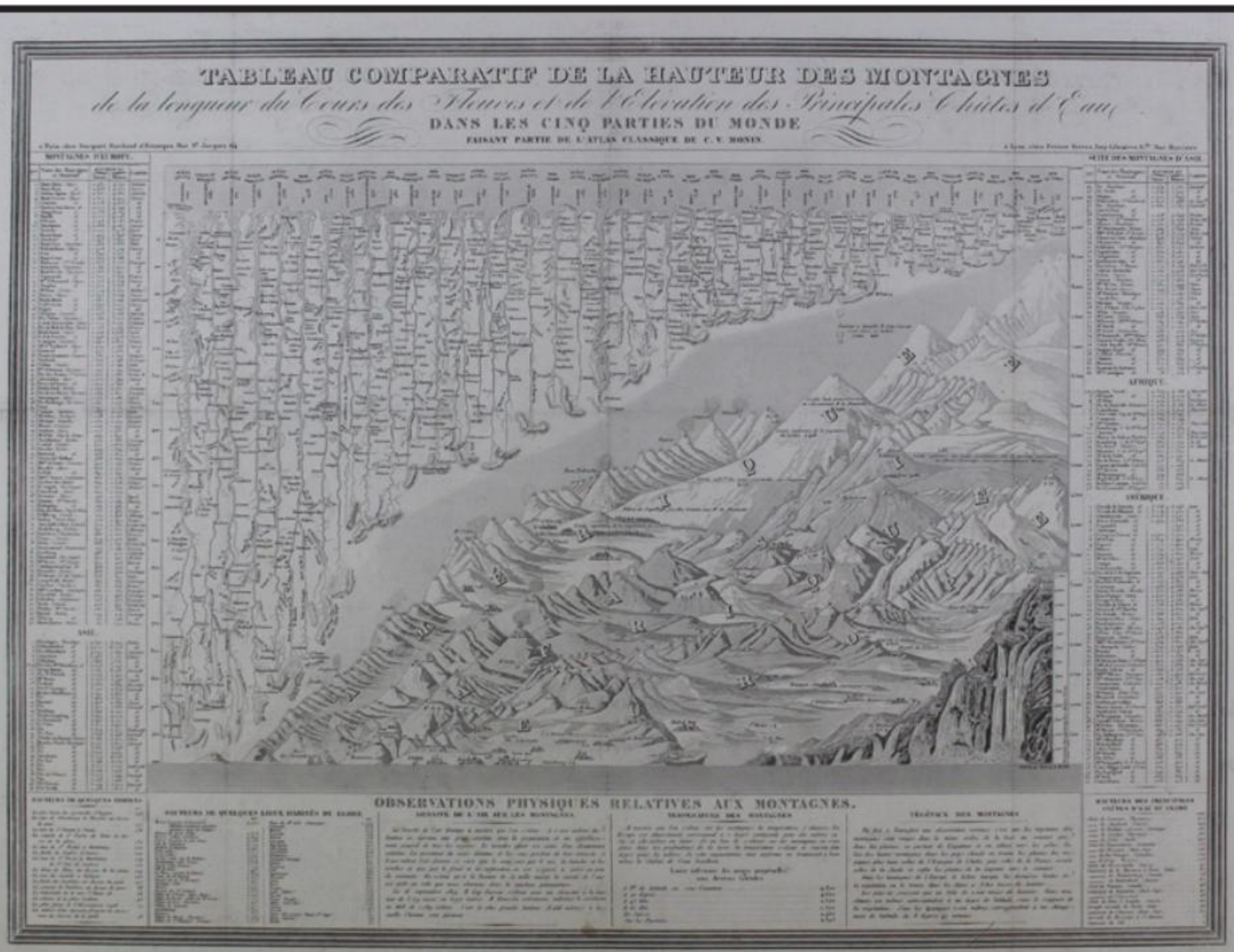


TABLEAU COMPARATIF DE LA HAUTEUR DES MONTAGNES
de la longueur du Cours des Fleuves et de l'Elevation des Principales Chutes d'Eau
DANS LES CINQ PARTIES DU MONDE
FAISANT PARTIE DE L'ATLAS CLASSIQUE DE C.V. MONIN
OBSERVATIONS PHYSIQUES RELATIVES AUX MONTAGNES.

72. Tableau Comparatif de la Hauteur des Montagnes de la Longueur de Cours des Fleuves et de l'Elevation des Principales Chutes d' Eau dan les Cinq Parties du Monde

[Anonymous]
Steel engraving
A Paris, Chez Hoquart, Marchand d'Estampes, Rue St. Jacques 64. [1839]
Image 445 x 605 mm, Sheet 503 x 700 mm

A large-scale fold out comparative table of the world's mountains, rivers, and waterfalls, derived from Bulla's 1826 chart, the author of the first table in this format. The finely engraved rivers, mountains, and waterfalls are fully annotated with numbered keys and descriptive text in French,surrounding the image.

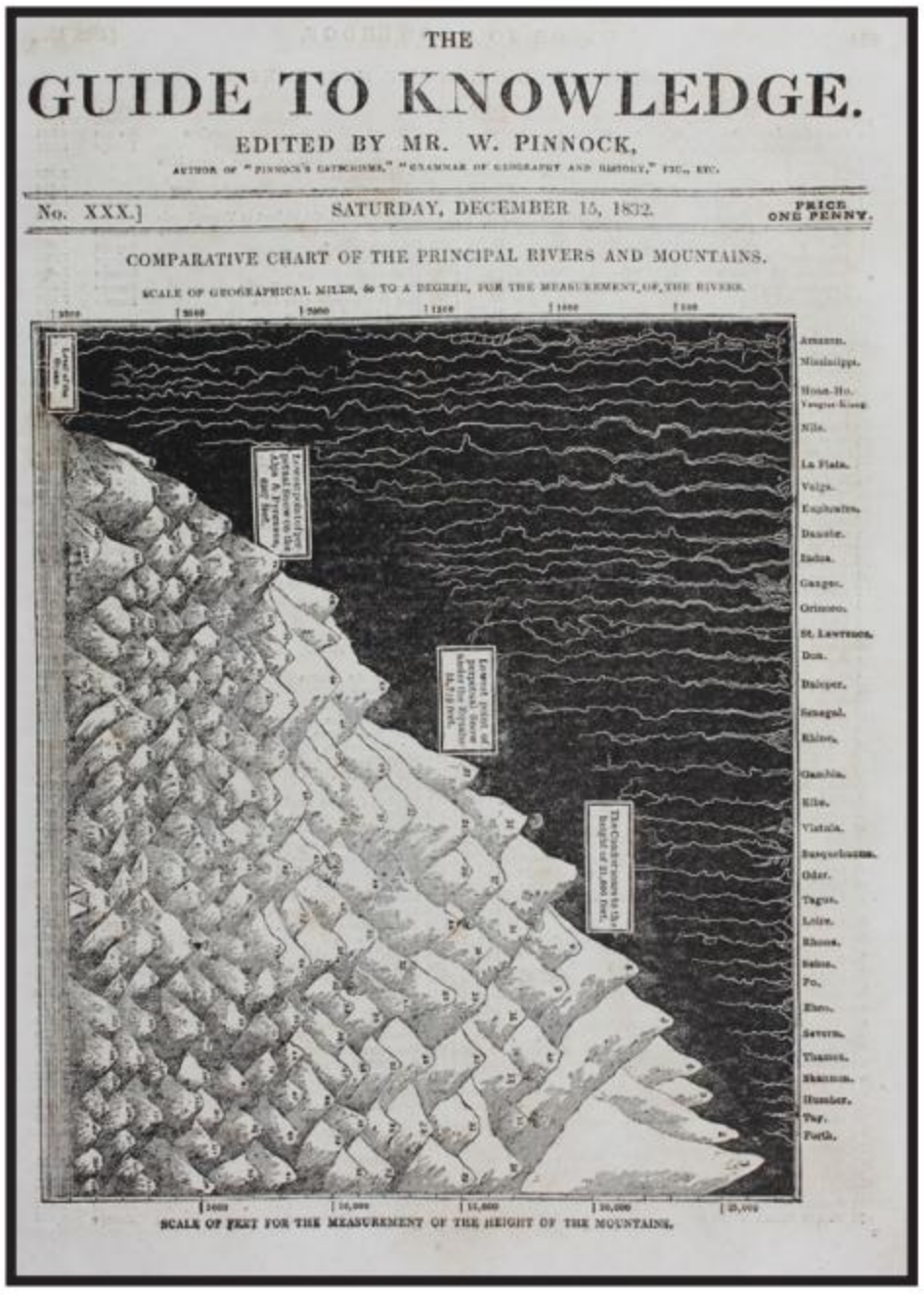
The chart was published in C.V. Monin's *'Atlas Classique De La Geographie Ancienne, Du Moyen Age Et Moderne, A l'Usage des Colleges et des Pensions, Pour Servir A L'Etude De La Geographie Et De L'Histoire, Par V. Monin, Ingenieur-Geographe, Membre De La Societe De Geographie.'*

Condition: Pressed vertical and horizontal folds as issued. Some light wear to folds.
[45499]
£300

73. A View of the Principal Mountains throughout the World [Shewing their Comparative Heights.]
Joseph Constantine Stadler after T. Hulley
Aquatint
[London. Published April, 12, 1817 at R. Ackermanns Repository of Arts 101 Strand.]
Image 315 x 378, Sheet 342 x 419 mm

A scarce comparative landscape featuring the world's principal mountains as close neighbours. A smoking Etna stands prominent to the left-centre while the snow-capped Himalayas dwarf all in the far distance. Pyramids can be seen on the shore to the right, with a domed basilica and spired church further back. All provide a sense of scale to the natural giants that surround them.

Condition: 'Key Founded on Geometrical Admeasurements' and publication line trimmed below. Old glue residue spots on verso.
[45142]
£450

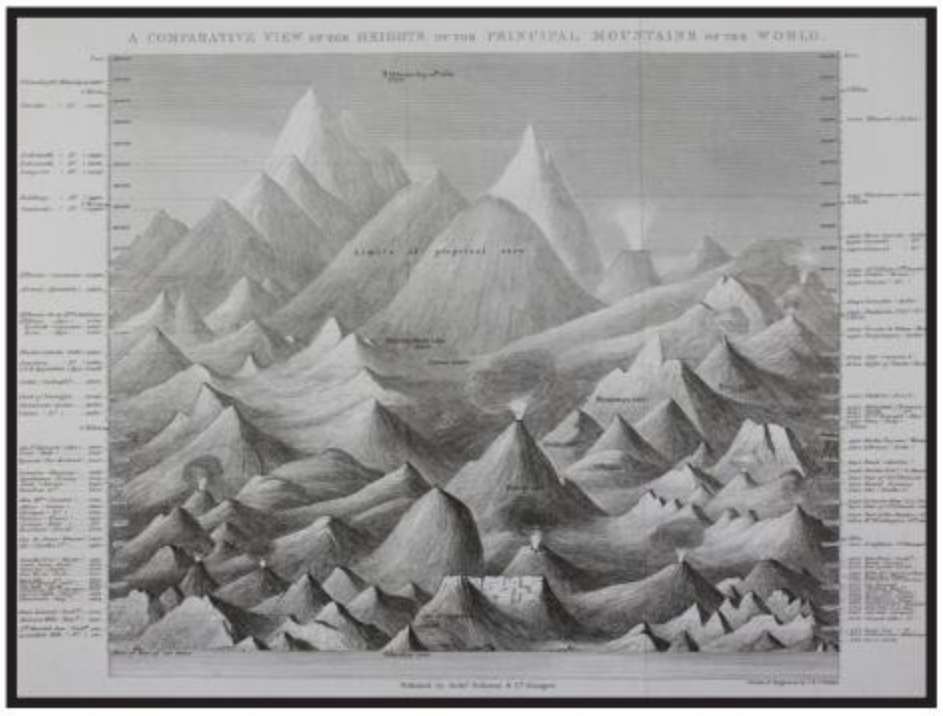


74. Comparative Chart of the Principal Rivers and Mountains

Archer, Joshua
Woodblock
Saturday, December 15, 1832 [William Edwards, 12, Ave Maria Lane, London]
171 x 147 mm

A curious comparative chart of the world's principal rivers and mountains, from William Pinnock's '*Guide to Knowledge*' (No. XXX). Mountains are numbered, and named to verso. The publication was a serialised work that also included astronomical charts, county maps, town plans and maps of the continents.

Condition: Slightly rubbed impression.
[45508]
£50



75. A Comparative View of the Heights of the Principal Mountains of the World

Walker, John and Charles
Copper engraved
Published by Arch.d Fullarton & Co. Glasgow. c. 1840
185 x 216 mm

A comparative landscape featuring the world's principal mountains and volcanoes as close neighbours. Their respective names and heights have been included in the left and right margins. A miniscule hot air balloon can be seen to the right of the Himalayas.

Condition: Vertical folds, as issued.
[45511]
£75

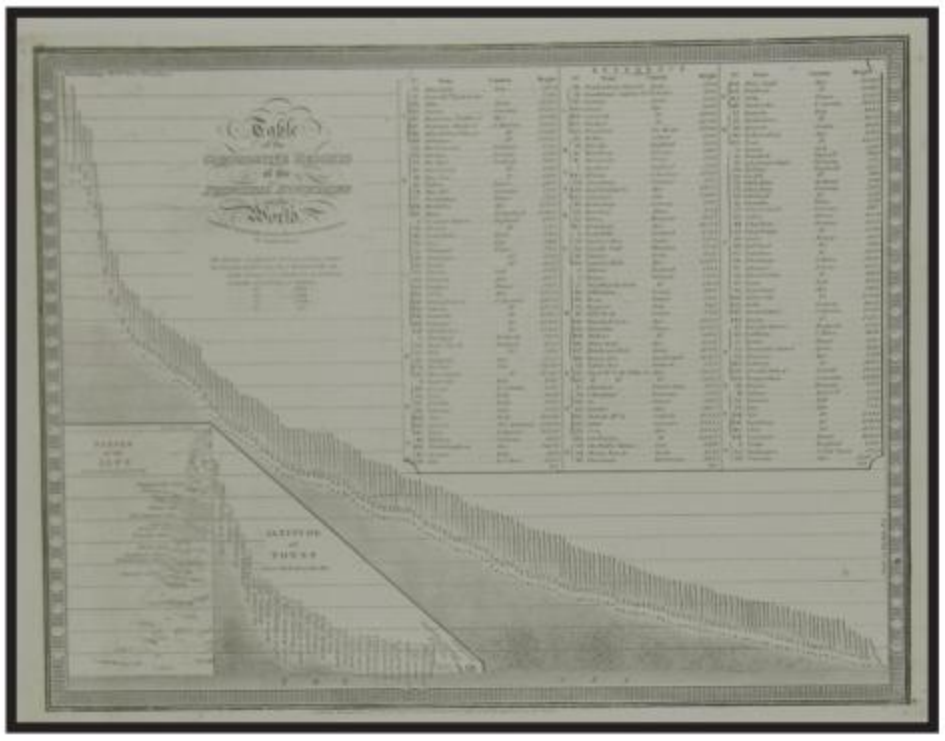
76. A Comparative View of some of the Principal Hills in Great Britain

Moule, Thomas
Etching
c. 1840
252 x 208 mm

An illustration of the relative sizes of British hills and mountains. Ben Nevis and Ben Macdui tower in the distance. Salisbury Cathedral, Saint Paul's and Greenwich Observatory have been added to the bottom of the print to give a sense of scale and to illustrate the magnitude of nature over the achievements of humankind.

Later included in Barclay's *'Complete and Universal English Dictionary'*. Interestingly, Ben Macdui, and not Ben Nevis, is shown as being the highest peak in Great Britain.

Condition: Small loss to top right margin and small repaired tear to lower right margin.
[45509]
£75

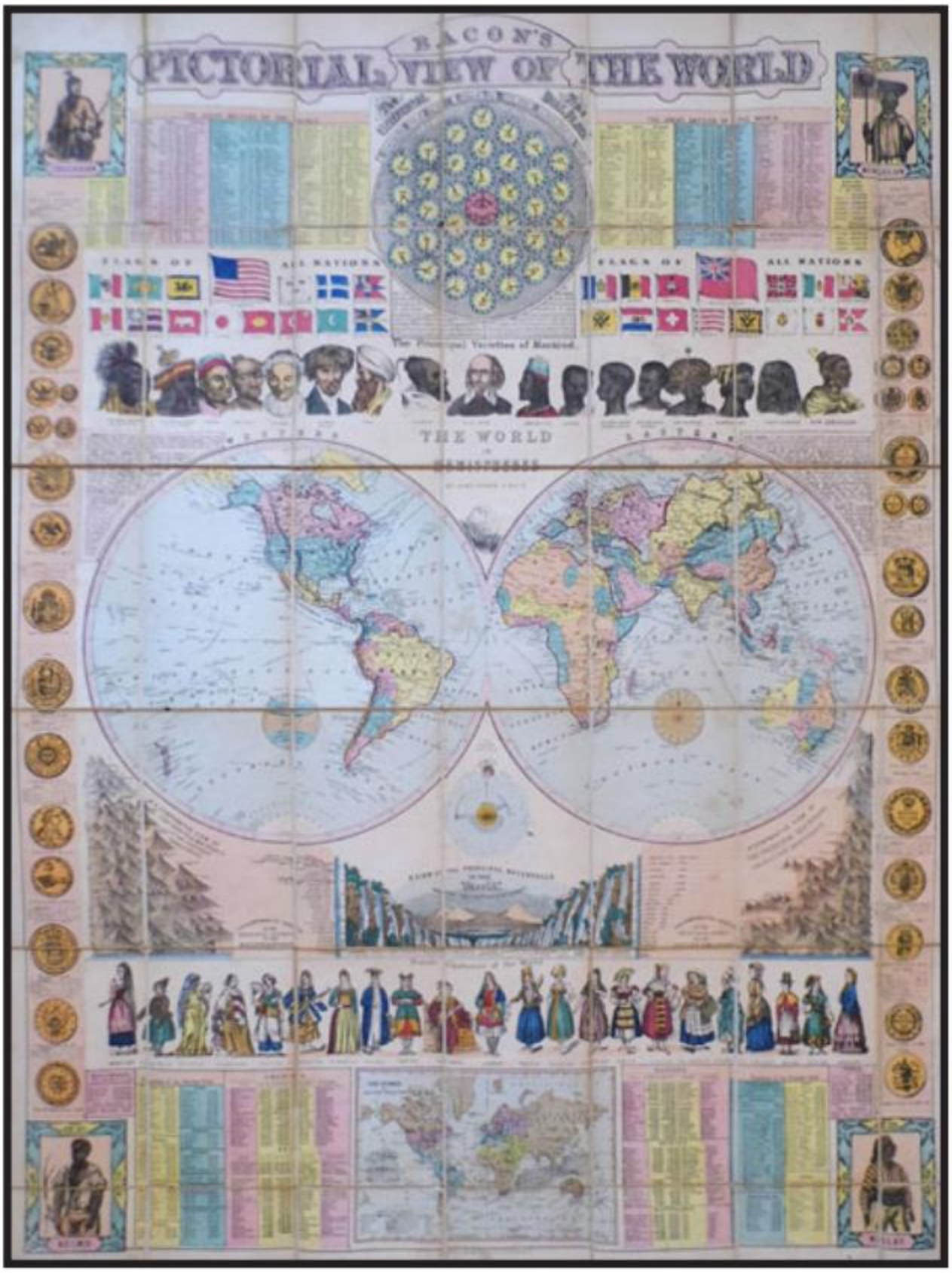


77. Table of the Comparative Heights of the Principle Mountains in the World

Wyld, James
Steel engraved
London published by Jas. Wyld (successor to Ms. Faden) Geographer to the Queen Charing Cross .East. 1854
229 x 292 mm

A table comparing heights of mountains around the world from James Wyld's *A New General Atlas of Modern Geography.* The table also shows passes of the Alps above sea level and altitude of towns above sea level.

[41803]
£50



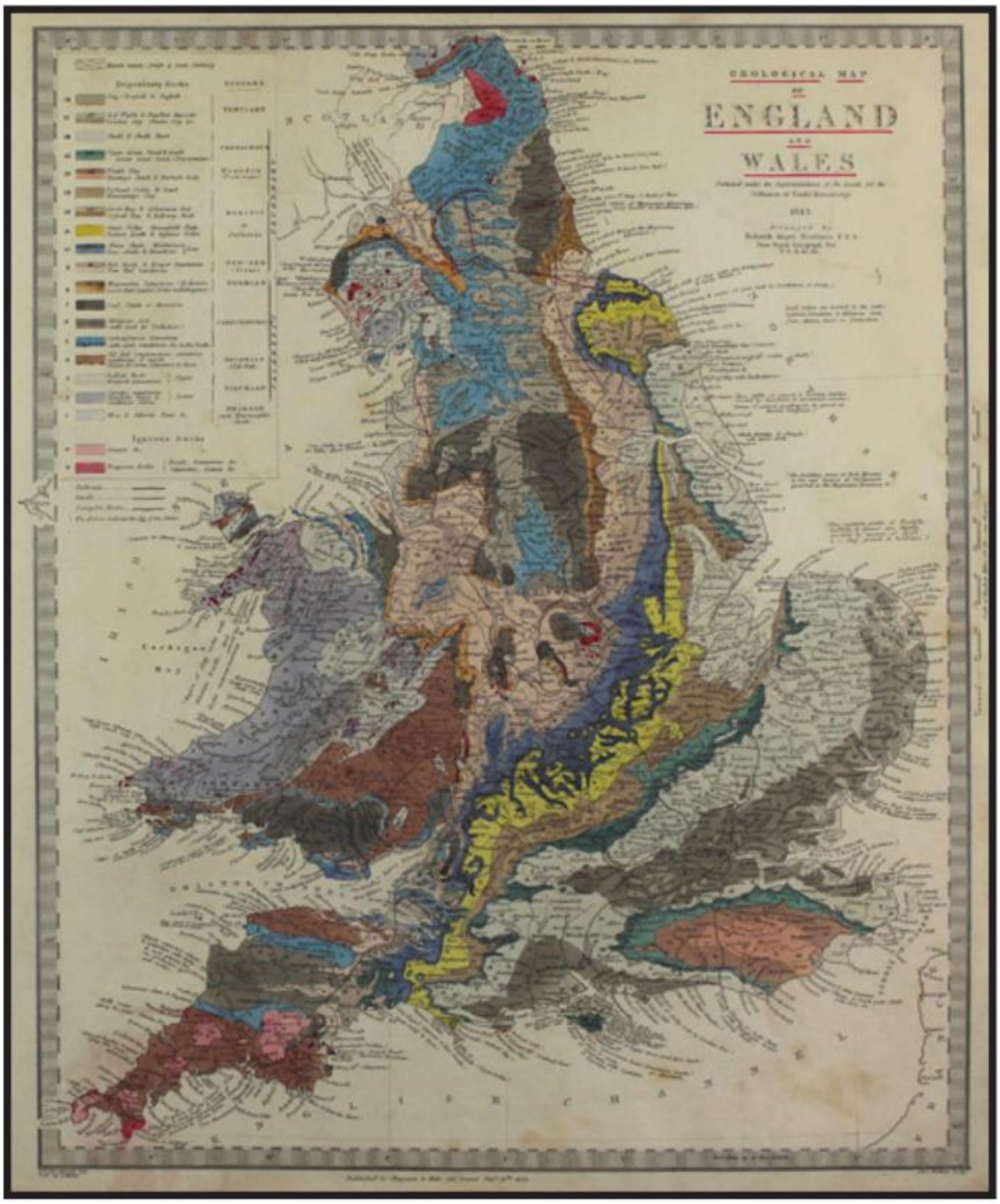
78. Bacon's Pictorial View of the World

Lithograph with original hand colour
London, G.W. Bacon & Co. 127 Strand W.C. c. 1868
Overall 1015 x 755 mm, Each sheet 185 x 115 mm

A very scarce folding wall map of the World in hemispheres surrounded by comparative views of the principal mountains in the Eastern and Western Hemispheres, a view of the principal waterfalls in the World, the principal varieties of mankind, flags of all nations, female costumes of the World, and the Universal Time Dial Plate showing the time of the day in 33 cities of the World when 12 o'clock (noon) in London.

In addition to these, the sheet contains a table of the 'Great Battles of the World,' depictions of coins of all nations, a smaller inset map of The World on Mercator's Projection, Population charts, and ethnographic illustrations of 'a Caucasian, a Mongolian, A Negro and a Malay man' on each corner.

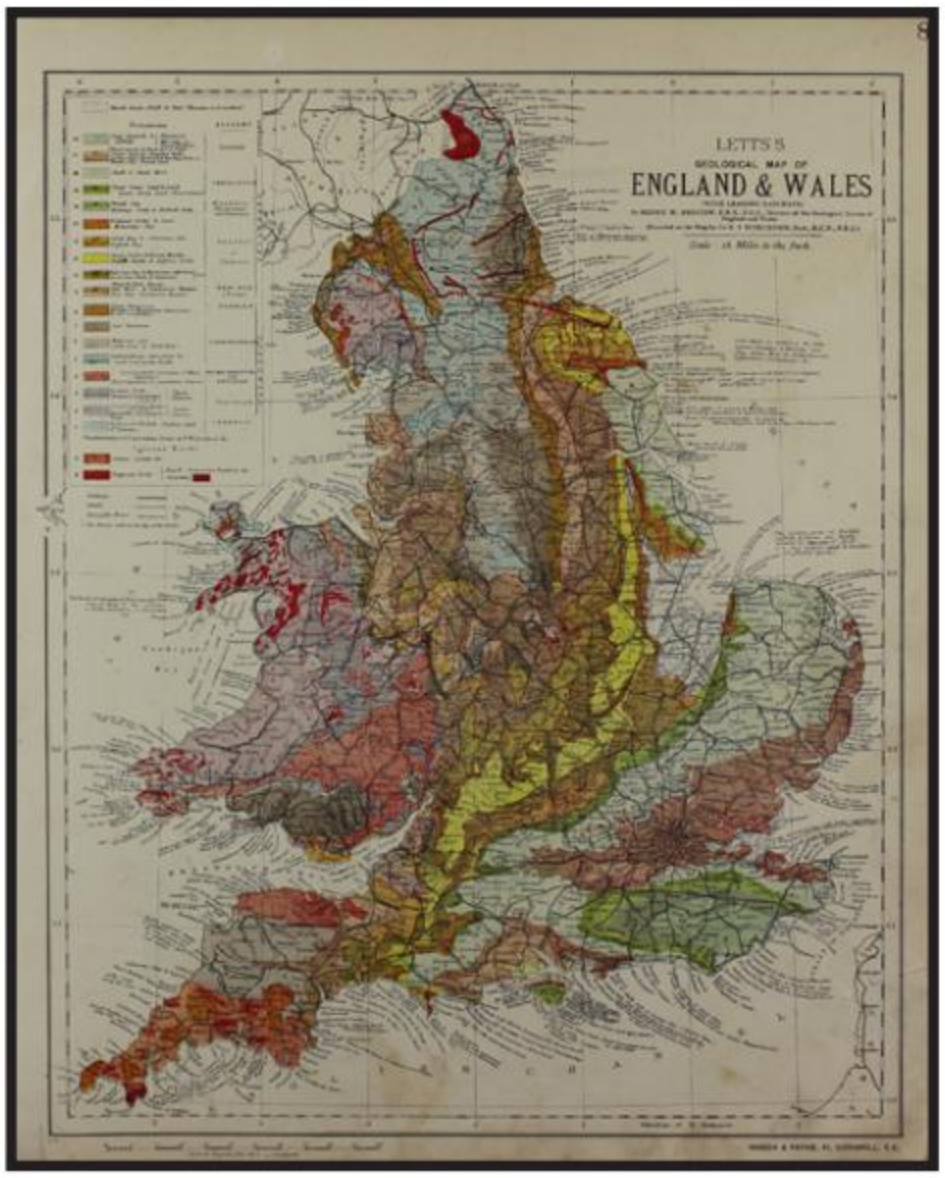
Condition: The map is dissected into 42 sheets laid to linen, as issued. Some light staining and one small repaired tear lower left margin not affecting the image.
[34940]
£1,800



79. Geological Map of England and Wales, published under the superintendence of the Society for the Diffusion of Useful Knowledge

Murchison, Roderick Impey
Steel engraved with hand colour
Published by Chapman & Hall 186 Strand Decr. 15th 1843
380 x 309 mm

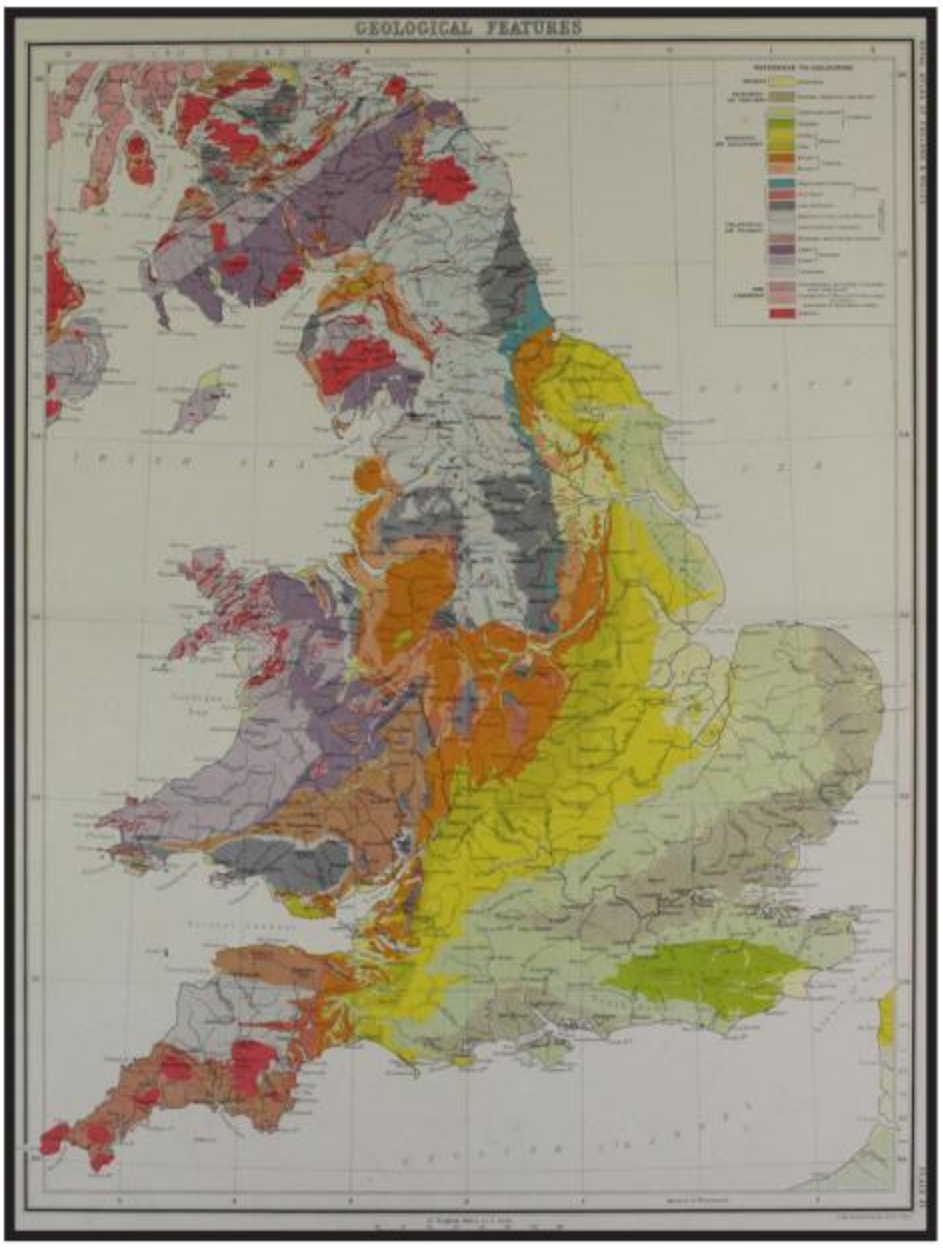
An attractively coloured geological map of England and Wales. Map illustrates the area's rock formations, described in detail in a key to top left. Railroads, canals and navigable rivers have also been illustrated. The map was made under the direction of the *'Society for the Diffusion of Useful Knowledge'* (SDUK).
Condition: Light toning and surface dirt, mainly to margins.
[45187]
£200



80. Geological Map of England & Wales (with leading railways)
Bristow, Henry W.
Chromoltihograph
[Letts, Son & Co. Ltd, London, c. 1883]
390 x 315 mm

A detailed geological map of England and Wales, from *'Letts's popular atlas, being a series of maps delineating the whole surface of the globe',* first published in 1883. The map illustrates the area's rock formations, described in detail in a key to top left. Map also provides a detailed layout of the railway network at the time.

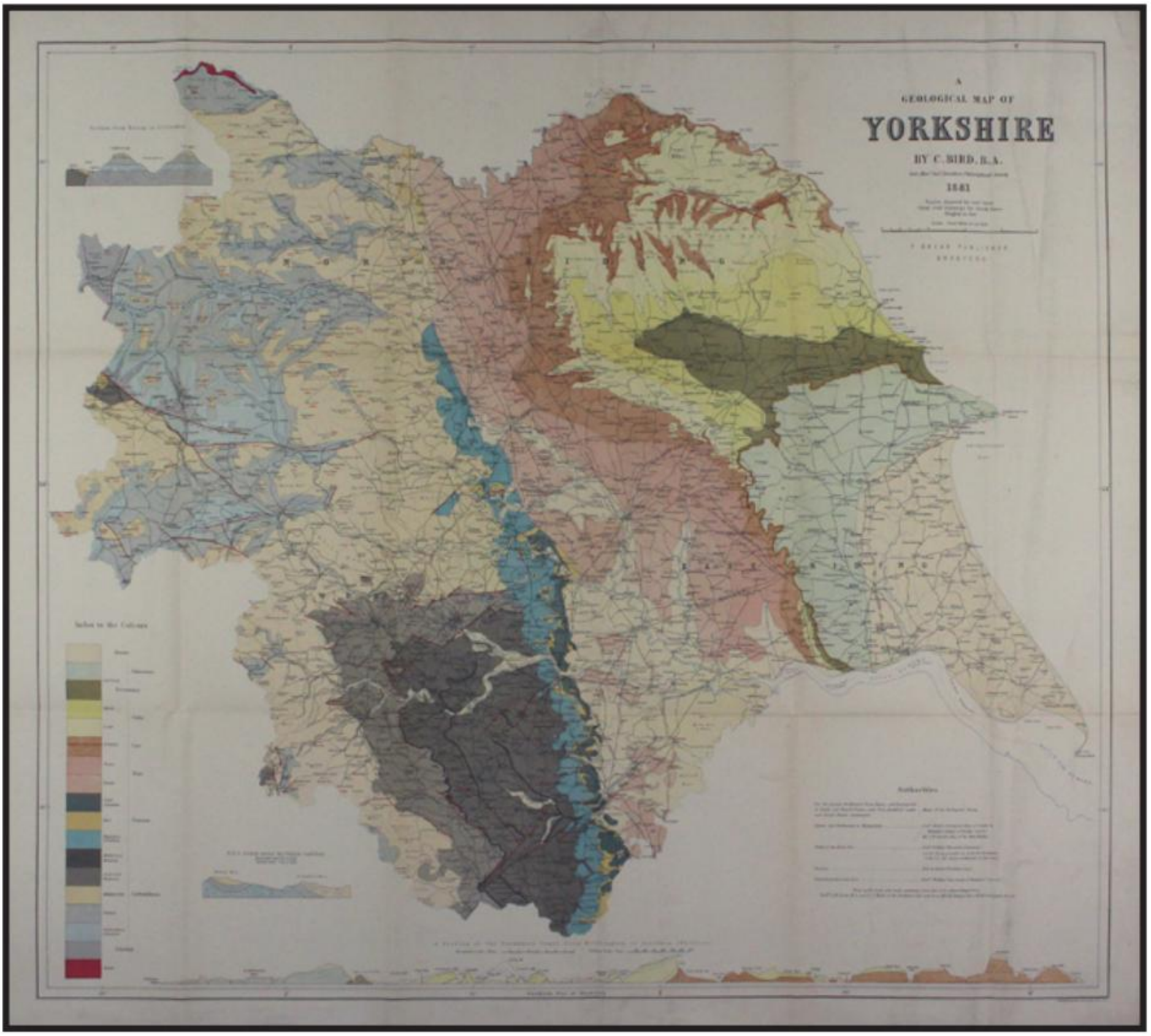
Condition: Surface marking and tears to lower and right margins. General paper wear.
[45186]
£100



81. Geological Features [England and Wales]
Bartholomew, John
Offset lithograph
John Bartholomew & Co. Edin'r. [c.1899]
420 x 320 mm

A geological map of England and Wales from the *'Royal Atlas of England & Wales'.*

Condition: Excellent impression. Pressed centre fold as issued.
[43523]
£180



82. A Geological Map of Yorkshire
Bird, Charles
Chromolithograph
T. Brear Publisher. Bradford. 1881; W & AK Johnston, Edinburgh & London.
660 x 735 mm

A large colour coded geological map of Yorkshire, with the colours representing different geological periods. Faults in the land have been denoted using red lines, and coal outcrops with black. A sectional view of the Yorkshire coast from Bridlington to Saltburn runs across the bottom of the map.

Condition: Horizontal and vertical folds as issued.
[45516]
£375

83. Geological Map of Ireland

T. Hallissy after W.H. Clarke
Chromolithograph
[Ordnance Survey Office, Dublin, 1928]
Image 500 x 440 mm

A detailed geological map of Ireland with the different counties and provinces, cities, rivers and major roads. A coloured index is included indicating the geological makeup of each band. This map was first published individually by the Irish Ordnance Survey Office in Dublin in 1928 and was then revised and reprinted in 1962.

The inscription underneath the image reads: '*Prepared by T. Hallissy, B.A., M.R.I.A., Senior Geologist W.H. Clarke, Draughtsman.*'

Condition: Creasing, light dirt build-up and foxing to margins. Left margin trimmed.
[43075]
£300

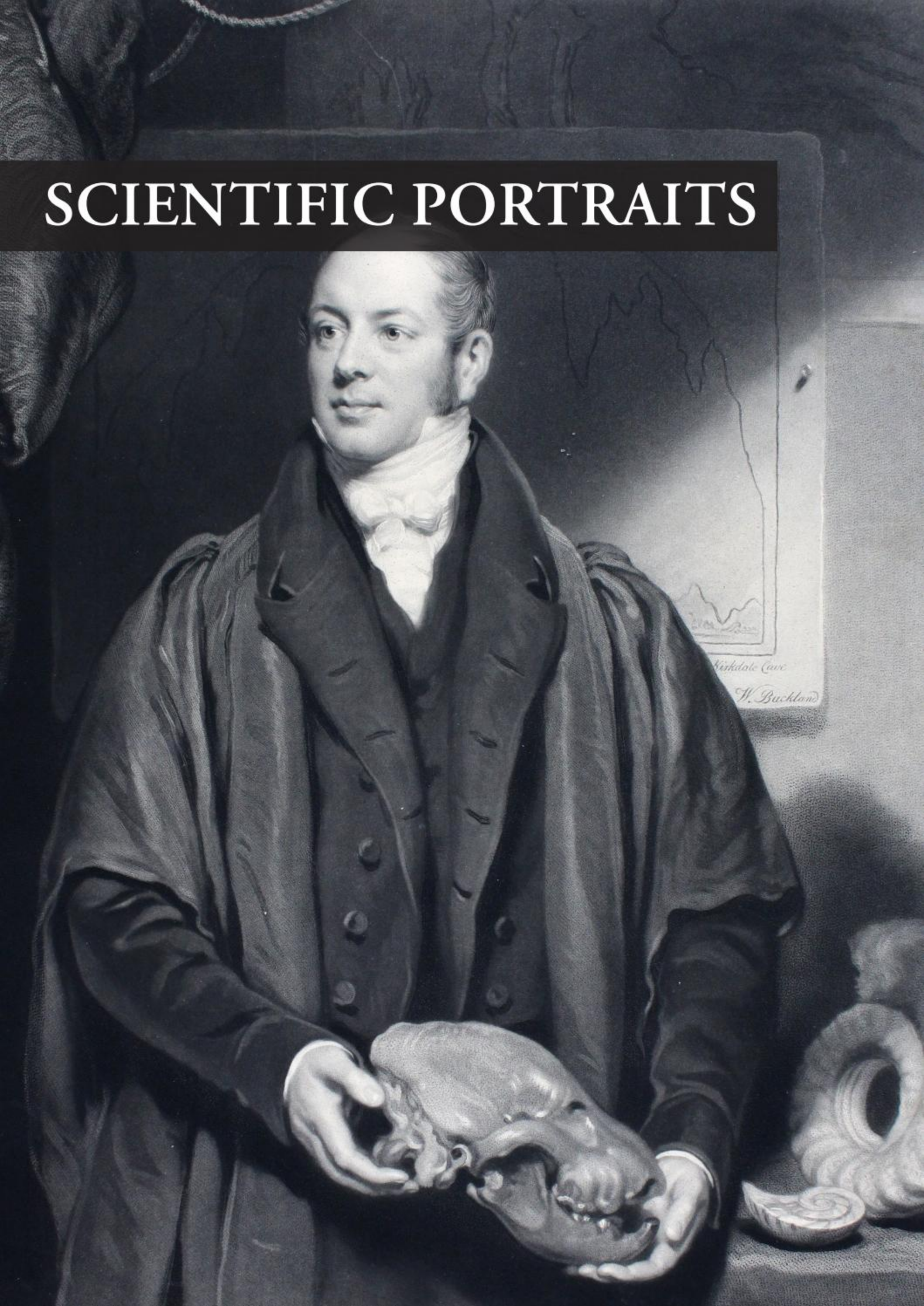
84. Geological Map of the United States and British North America, Constructed from the most recent documents & unpublished materials
Johnston, Keith after Rogers, Henry Darwin
Lithograph printed in colours
William Blackwood & Sons Edinburgh & London. c. 1856
510 x 615 mm

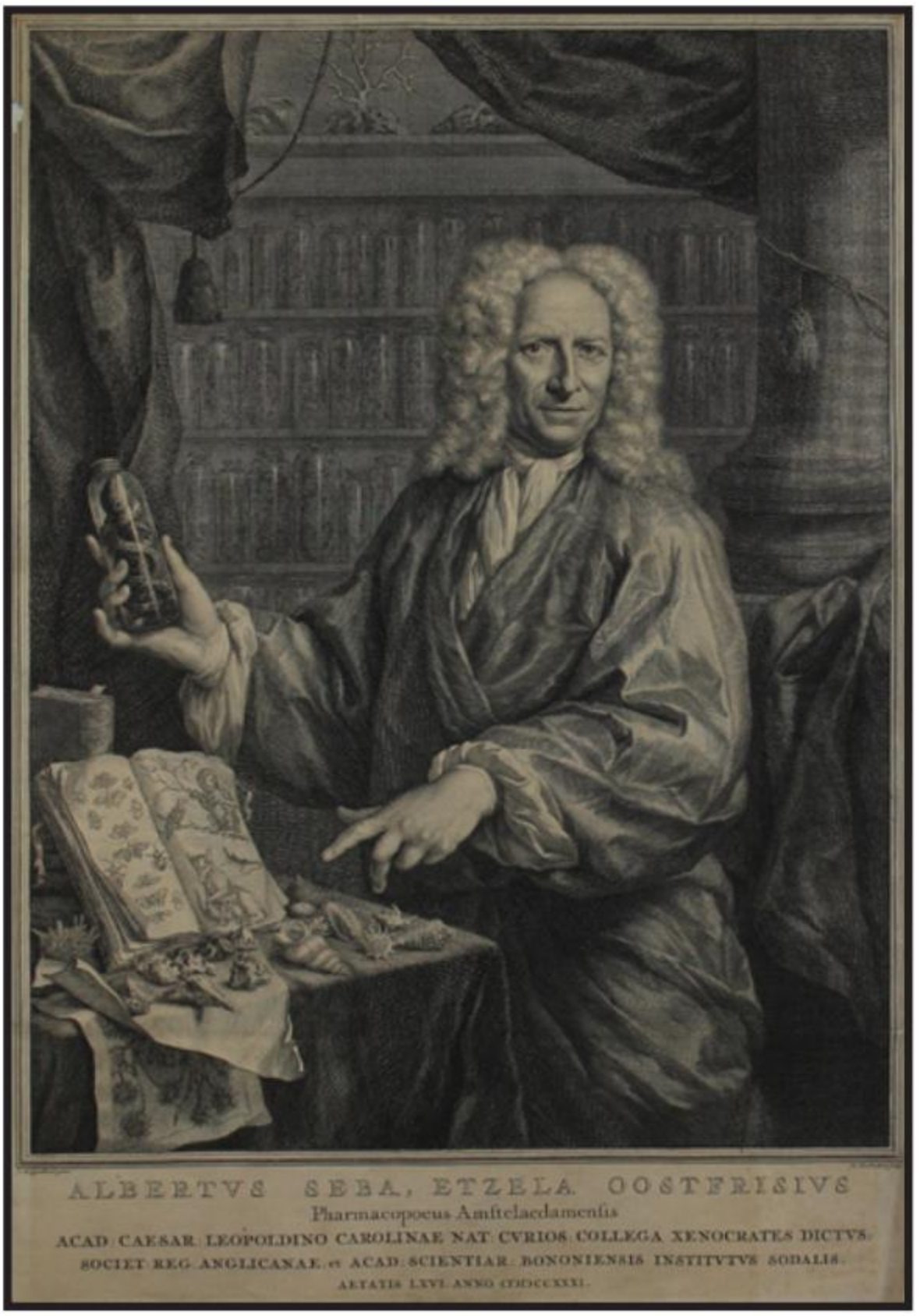
A wonderfully detailed and early geological map of the USA, from Keith Johnston's Physical Atlas with a cross section of the Appalachian Mountains from Lake Onterio to Egg Harbour, New Jersey.

Full title reads '*Geological map of the United States and British North America, constructed from the most recent documents & unpublished materials, for Keith Johnston's Physical atlas by Professor H.D. Rogers, Boston, U.S., 1855.*'

Condition: Pressed centrefold as issued.
[38218]
£375

SCIENTIFIC PORTRAITS




ALBERTVS SEBA, ETZELA OOSTFRISIVS
Pharmacopoeus Amstelaedamensis
ACAD CAESAR LEOPOLDINO CAROLINAE NAT CVRIOS COLLEGA XENOCRATES DICTVS
SOCIET REG ANGLICANAE et ACAD SCIENTIAR BONONIENSIS INSTITVTVS SODALIS
AETATIS LXVI ANNO CIↃIↃCCXXXI

85. Albertus Seba, Etzela Oostfrisius. Pharmacopoeus Amstelaedamensis.

Jacobus Houbraken after Jans Mauritz Quinkhard
Engraving
[1731]
Image 384 x 294, Sheet 439 x 300 mm

A frontispiece, three-quarter length, portrait of the Dutch pharmacist, zoologist and collector Albertus Seba, depicted in his cabinet of curiosities. He holds a flask containing a preserved snake, and points at a table to his left covered in his collection of natural curiosities. Behind him are shelves stacked with various jars of formaldehyde preserved specimens.

Albertus Seba (1665–1736) moved to Amsterdam as an apprentice. In around 1700 he opened a pharmacy near the port, a strategic move, as it enabled him to ask sailors and ship surgeons to bring him exotic plants and animal products that he could use in his drug preparations.

At around the same time, Seba also started to collect snakes, birds, insects, shells and lizards in his house. In early 1716 he sold his entire collection to Peter the Great, where it was later used to form the core of the Kunstkammer, the first Russian public museum.

In October 1728 Seba became a Fellow of the Royal Society and some years later, in 1734, published a four-volume thesaurus of animal specimens with engraved illustrations. Several years after his death his second collection went on auction in Amsterdam. A number of objects were purchased by the Petersburg Academy of Sciences.

Condition: Trimmed to plate, even toning and light creasing.
[45143]
£280

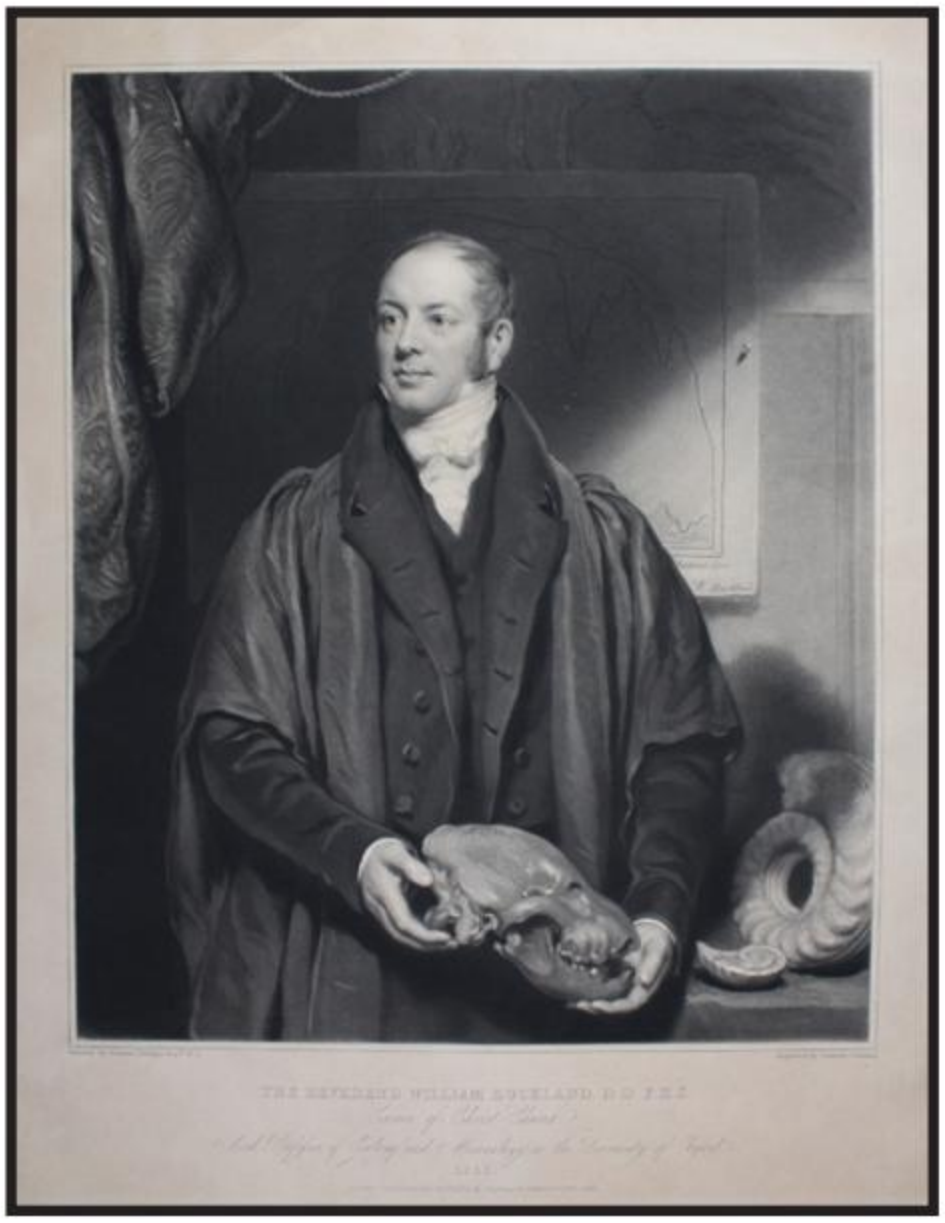
86. Carolus Linnaeus in His Lapland Dress.
Henry Kingsbury after Martin Hoffman
Mezzotint
Published January 1st 1805 by William Richardson, York House, 31 Strand
Image 487 x 350 mm, Plate 353 x 507 mm

An early state of this fine full-length portrait of Carl Linnaeus in the native dress of Lapland, he stands with a botanical sample in his hand and a stack of his works and material to the left.

Later states of this engraving were included as an illustration to Robert Thornton's *'Illustration of the Sexual System of Carolus von Linnaeus'*

Carl Linnaeus (1707 - 1778) was a Swedish botanist, physician, and zoologist, who laid the foundations for the modern scheme of binomial nomenclature (the Latin naming of species using two composite parts i.e. *Homo Sapiens*). He is known as the father of modern taxonomy, and is also considered one of the fathers of modern ecology.

Chaloner Smith 8 ii/iii
Ex-Col.: Hon Christopher Lennox-Boyd
Condition: Trimmed just outside the plate mark, loss to margin in top right hand corner, not affecting plate or image.
[16685]
£700



87. The Reverend William Buckland. D. D. F. R. S. Canon of Christ Church and Professor of Geology and Mineralogy in the University of Oxford
Samuel Cousins after Thomas Phillips
Mezzotint
London Published May 20th 1833, by Molteno & Graves, 20 Pallmall
Image 340 x 277, Plate 431 x 331, Sheet 459 x 355 mm

A half-length portrait print of William Buckland (1784-1856). Buckland was a Fellow in Mineralogy and Geology in the University of Oxford, and has been depicted wearing an academic gown. He holds an animal skull and stands next to a fossilised ammonite and a large horn.

The sheet pinned to the wall behind him shows a pictorial plan of Kirkdale Cave, North Yorkshire. The cave was discovered by workmen in 1821, and was found to contain fossilised bones of a number of mammals including hippopotamus, elephant and cave hyenas.

Buckland analysed the cave and its contents in December 1821. He determined that the bones were from the remains of animals brought into the cave by hyenas who had been using it for a den, rather than the result of the Biblical flood floating animal remains in from distant lands, as he had previously theorised. His reconstruction of an ancient eco-system from detailed analysis of fossil evidence was admired at the time, and considered to be an example of the correct practice of geo-historical research.

Buckland's interest in natural history was aroused in childhood, exploring the quarries and woods of his native Devon. In 1808 he was ordained a priest, but chose alongside this to continue pursuing his interest in minerals and geology. In the same year he was made a man of the cloth, Buckland was elected a Fellow of Oxford University, he was appointed Reader in Mineralogy in 1813 and in Geology in 1818. His lectures were the most popular in the university.

Buckland was initially a proponent of flood geology, a creationist theory that assumed the literal truth of the story of Noah's Ark. However, he abandoned this belief in his highly influential work, the Bridgewater Treatise (1836).

O'Donoghue 1
Condition: Even time toning to sheet, light creases to margins, not affecting image.
[45140]
£400

88. Costume of the Glaciers

Thomas Sopwith
Etching
c. 1840
Image 200 x 130, Sheet 215 x 149 mm

A satirical portrait relating to Buckland's research trips to the north of England to study glacial theories. The humorous depiction shows Buckland wrapped up in layers of warm clothing and carrying a variety of equipment including a roll of papers entitled '*Maps of Ancient Glaciers*' and tools for taking rock samples.

The labels at the lower left describe rock samples with scratches from a glacier made thousands of years ago along with scratches made by a cart on Waterloo Bridge 'the day before yesterday'. A coach in the background goes by a sign to Alston. Sopwith has even signed the portrait as '*Scratched by T Sopwith*'.

Buckland travelled to Switzerland in 1838 to meet Louis Agassiz after having become interested in his theory that polished and striated rocks as well as transported material had been caused by ancient glaciers. This meeting made him rethink his previous attribution of these effects in Scotland, Wales and northern England to the Biblical flood.

When Agassiz came to Britain for the Glasgow meeting of '*The British Association*' in 1840, the pair went on an extended tour of Scotland and found evidence there of former glaciation. In the same year Buckland was re-elected President of the Geological Society. Despite a hostile reaction there to his presentation of the theory, he was now satisfied that glaciation had been the origin of much of the surface deposits covering Britain.

Alongside his geological discoveries, Buckland was a man of the cloth. In 1845 he was appointed by Sir Robert Peel to the vacant Deanery of Westminster (he succeeded Samuel Wilberforce) and moved to Islip. As Dean and head of Chapter, Buckland was involved in repair and maintenance of Westminster Abbey and in preaching to the rural population of Islip, while lecturing on geology at the University of Oxford.

Condition: Some foxing and surface dirt.
[45148]
£300

89. "Natural Selection" [Charles Darwin]
Ape [Carlo Pellegrini]
Chromolithograph
Sept 30, 1871 [Watford & London, 1871]
Image 312 x 193, Sheet 357 x 235 mm

A satirical portrait of Charles Darwin, no. 33 from Vanity Fair's *'Men of the Day'* series. The likeness was published in 1871, the same year of the release of his book *'Descent of Man'*. By this time, the success of *'On the Origin of Species'* had made Darwin a well-regarded scientist and public figure. His portrait communicates this reverence, with Darwin seated casually on a velvet chair, his long white beard hiding a dry smile. With accompanying text page.

Condition: Small tears to far left margin, not affecting image.
[45189]
£275

90. "His religion is the worship of all sorts of winged and finny freaks." Jehu Junior
Spy [Sir Leslie Ward]
Chromolithograph
Vanity Fair Supplement, Vincent Brooks, Day & Son Ltd. [January 12th, 1905]
Image 341 x 221 mm, Sheet 395 x 270 mm

Full length portrait of Sir Edwin Ray Lankester KCB FRS (15th May 1847 - 13th August 1929), a British naturalist and evolutionary biologist. At the time of this caricature, Lankaster was Director of the Natural History Museum. Despite being depicted with two avian specimens, Lankaster's greatest contributions were in his studies of invertebrates. In his later life, he became a public spokesperson for rationalism, often aiming to expose popular mediums and spiritualists.

Condition: Crease to top left corner, not affecting image. Minor creases to bottom margin. Small ink stains to right margin, not affecting image.
[35397]
£50

Artists, Printmakers, & Publishers
BIOGRAPHIES

Joshua Archer was a draughtsman and engraver of Pentonville, London. (fl. 1841 - 1861) was prolific engraver of maps. He had produced a series of maps for William Pinnock, a part series of Diocese maps for the British Magazine , some maps for Henry Fisher, and engraved a set for Thomas Dugdale's Curiosities of Great Britain. The Dugdale maps were engraved by Archer to replace those by Cole and Roper found in the early copies of Dugdale's historical and topographical gazetter-style work.

John George Bartholomew (1860 - 1920) was a British cartographer and geographer. Bartholomew came from an eminent line of map-makers but it was not until his own reign that the family business flourished. Bartholomew radically improved the standards of British cartography by introducing the use of contours and systematic colour layering to show relief.

Maison Basset was a well-known French publishing house based in Paris. The family engraved and published various perspective views and cartographic items up until the second half of the nineteenth century.

Petrus Bertius (14th November 1565 – 13th October 1629) was a Flemish theologian, historian, geographer and cartographer and was related to Jodocus Hondius Sr. and Pieter van den Keere by marriage. Bertius studied at the University of Leiden and later travelled in Germany and Russia. In 1620 he emigrated to France where he was appointed as a cosmographer to the court Louis XIII. Bertius published a number of folio maps, but never published an atlas of his own. His maps were either separately published or included in atlases and books by other publishers.

Charles Bird BA, late Honourable Secretary to the Bradford Philosophy Society, (1843-1910) was an English geologist. After his first appointment as Second Master at the Bradford Grammar School he became considerably interested in geology. He published a number of articles in various geological periodicals, including the *'Rochester Naturalist'*. He was President of the periodical's society between 1883 and 1889, leading local excursions. He authored *'Elementary Geology'* (1891) and '*Advanced Geology'*.

Cornelis Bloemaert (1603-1692) was a Dutch Golden Age painter and engraver. He studied under his father, Abraham Bloemaert, and with his brothers Hendrick and Adriaan, and his father's pupil, Gerard van Honthorst. He originally trained as a painter, though shortly afterwards devoted himself primarily to printmaking, learning engraving under Crispijn van de Passe. In 1630 moved to Paris and settled in Rome sometime before 1633. He spent his life working, despite horrific injuries to his hand in a fire.

Henry William Bristow (1817–1889) was an English geologist and naturalist. After passing with Distinction through King's College, London, he joined the staff of the Geological Survey in 1842, and was set to work in Radnorshire. From this county he was shortly afterwards transferred to the Cotswolds, which he examined up to Bath, and afterwards surveyed a large part of Dorset, Wiltshire, and Hampshire, with the Isle of Wight, besides some of the Wealden area, Berkshire, and Essex, rising ultimately in 1872 to the position of Director for England and Wales. He was elected F.G.S. in 1843 and F.R.S. in 1862, was an honorary member of sundry societies, and received the order of SS. Maurice and Lazarus.

Samuel Cousins (1801-1887) was an English mezzotint engraver. He was apprenticed from 1814 to the engraver Samuel Reynolds, during which time he engraved many of the 360 mezzotints illustrating the works of Sir Joshua Reynolds. He published his own plates for the first time in 1826, after having established himself as an independent engraver using a combination of stipple engraving and etching processes. As well as self-publishing, Cousins was also employed by many leading print publishers in this period. His most commercially successful works were his prints after popular paintings. In 1855, he was one of only two engravers to be elected Royal Academician, after having been elected an associate engraver of the Academy in 1835.

Day & Haghe were one of the most prominent lithographic companies of the nineteenth-century. They were also amongst the foremost pioneers in the evolution of chromolithography. The firm was established in 1823 by William Day, but did not trade under the moniker of Day & Haghe until the arrival of Louis Haghe in 1831.

In 1838, Day & Haghe were appointed as Lithographers to the Queen. However, and perhaps owing to the fact that there was never a formal partnership between the two, Haghe left the firm in the 1850's to devote himself to watercolour painting. The firm continued as Day & Son under the guidance of William Day the younger (1823-1906) but, as a result of a scandal involving Lajos Kossuth, was forced into liquidation in 1867. Vincent Brookes bought the company in the same year, and would produce the caricatures for Gibson Bowles' *Vanity Fair* magazine, as well as the illustrations for *Cassell's Poultry Book,* amongst other commissions.

Francis Delaram (active 1615-1627) was a British engraver. Nothing is known of Delaram's life apart from what can be deduced from his prints. Most of them are portraits or title-pages, but Delaram was also responsible for some early books of flowers, beasts and birds, and probably the earliest English drawing book (of which no copy survives). While in London he worked for many publishers, including Compton Holland, Sudbury & Humble, Roger Daniell and Maurice Blount. He never acted as publisher himself.

Abraham van Diepenbeeck (1596-1675) was a Flemish painter, glass-painter and designer of prints and tapestries. He was a pupil and assistant of Peter Paul Rubens. He worked in 's-Hertogenbosch, Antwerp, and in the early 1630s in Paris.

Étienne Dupérac or du Pérac (c.1525–1604) was a French architect, painter, engraver, and garden designer. He is most well-known for his topographical studies of Rome and its ruins in the late sixteenth century. Dupérac was born in Bordeaux or Paris and arrived in Rome in 1550, where he became a skilled designer and engraver. He published a bird's-eye view of Ancient Rome with buildings reconstructed (*'Urbis Romae Sciographia',* 1574) and one of modern Rome (*'Descriptio'*, 1577) alongside a book of forty engravings of Roman monuments and antiquities (*'Rome'*, 1575).

William Finden (1787 - 1852) was an English engraver. Based in London, he mainly worked in collaboration with his younger brother, the engraver Edward Francis Finden (1791-1857).

Martin Hoffman, virtually nothing is known about this eighteenth century artist, with no mention of him in the standard reference books. This painting is the only work that appears to be attributed to him.

Jodocus Hondius (14th October 1563 - 12th February 1612) was a Dutch Flemish cartographer, engraver, and publisher. Hondius is most famous for reviving the primacy of the work of Gerard Mercator, through the publication of his *Atlas*, and the smaller *Atlas Minor*, in the early seventeenth century, at a time when cartography was largely dominated by Ortelius' *Theatrum Orbis Terrarum*.

The Mercator-Hondius *Atlas* was composed of maps pulled from plates Hondius had purchased from Mercator's grandson, as well as thirty-six new plates Hondius commissioned, and in many cases engraved, himself. He is also believed to have been the chief engraver of the plates for John Speed's *Theatre of the Empire of Great Britaine*. Following his death, he was succeeded by his sons, Jodocus the Younger and Henricus, as well as his son in law Jan Jansson.

Henricus Hondius (1597 - 16th August 1651), often called Hendrik Hondius the Younger to differentiate him from the earlier, and unrelated portrait engraver Hendrik Hondius the Elder, was the son of the famous cartographer Jodocus Hondius. Like his father, Henricus was an engraver, cartographer, and publisher. He first came to prominence through his publication in 1606 of a new version of Mercator's 1569 World Map, the plates for which he had obtained from Mercator's grandson Rumold. Following his father's death, Henricus co-ran the family business, eventually partnering with his brother-in-law, Jan Jansson.

Johann Baptist Homann (20th March 1664 - 1st July 1724) was a German engraver and cartographer, and the Imperial Geographer to the Holy Roman Emperor Charles VI. In 1702 he opened a publishing house in Nuremberg, and his maps often make reference to his membership of the Prussian Royal Academy of Sciences and his imperial patronage. Upon his death, his maps passed to the **Homann Heirs Company** and reprinted many times before the company closed in 1848.

Jacob, or Jacobus, Houbraken (1698-1780) was a Dutch portrait engraver, and dealer and collector of Rembrandt's etchings. Born in Dordrecht, he was the son of the artist Arnold Houbraken. In 1707 he moved to Amsterdam, where he assisted his father on a book of the lives of the Dutch Golden Age artists, entitled '*De Groote Schouburgh der Nederlantsche konstschilders en schilderessen*' (1718-1721).

Between 1743 and 1752, Houbraken worked with George Vertue on Thomas Birch's '*Heads of Illustrious Persons of Great Britain*'. He also engraved the portraits for Jan van Gool's '*Nieuwe schouburg der Nederlantsche kunstschilders*' (1750-51). Between 1752 and 1759, he worked on Jan Wagenaar's '*Vaderlandsche historie*', which was published by Isaac Tirion.

Thomas Hulley (fl. 1798 - 1817) was a British watercolourist and aquatinter. He is best-known for his topographical works featuring mountains and rivers. Hulley is believed to have lectured in Bath in oil painting as well as in the practise of tinted drawings.

Johannes Janssonius (1588 - 1664) was a famed cartographer and print publisher. More commonly known as Jan Jansson, he was born in Arnhem where his father, Jan Janszoon the Elder, was a bookseller and publisher. In 1612 he married the daughter of the cartographer and publisher Jodocus Hondius, and then set up in business in Amsterdam as a book publisher. In 1616 he published his first maps of France and Italy and from then onwards, produced a very large number of maps which went some way to rival those of the Blaeu family, who held a virtual monopoly over the industry.

From about 1630 to 1638 he was in partnership with his brother-in-law, Henricus Hondius, issuing further editions of the Mercator/Hondius atlases to which his name was added. On the death of Hondius he took over the business, expanding the atlas still further, until eventually he published an eleven volume *Atlas Major* on a scale similar to Johannes Blaeu's magnum opus. After Jansson's death, his heirs published a number of maps in the *Atlas Contractus* of 1666, and, later still, many of the plates of his British maps were acquired by Pieter Schenk and Gerard Valck, who published them again in 1683 as separate maps.

Alexander Keith Johnston (28 December 1804 - 9 July 1871) was a Scottish geographer. He was born at Kirkhill near Edinburgh. After an education at the high school and the University of Edinburgh he was apprenticed to an engraver; and in 1826 joined his brother (who would become Sir William Johnston, Lord Provost of Edinburgh) in a printing and engraving business, forming the well-known cartographical firm of W. and A. K. Johnston.His interest in geography had developed early, and his first important work was the National Atlas of General Geography, which gained for him in 1843 the appointment of Geographer Royal for Scotland.

Johnston was the first to bring the study of physical geography into competent notice in England. His attention had been called to the subject by Alexander von Humboldt; and after years of labour he published his magnificent Physical Atlas in 1848, followed by a second and enlarged edition in 1856. This, by means of maps with descriptive letterpress, illustrates the geology, hydrography, meteorology, botany, zoology, and ethnology of the globe. The rest of Johnston's life was devoted to geography, his later years to its educational aspects especially. His services were recognised by the leading scientific societies of Europe and America. He died at Ben Rhydding, Yorkshire, in 1871.

Henry Kingsbury (fl. 1775 - 1804) mezzotint and stipple engraver working in London at the turn of the nineteenth century, specialising in portraiture. His name also appears on satirical engravings published by S. W. Fores.

Joseph Lemercier (1803-1887) was the founder of the large and prolific Parisian printer and publisher Lemercier & Cie.

Letts were a family of map makers, publishers, and stationers in London. John Letts started the business in 1796.

Gerard Mercator (1512 - 1594) originally a student of philosophy was one of the most renowned cosmographers and geographers of the 16th century, as well as an accomplished scientific instrument maker. He is most famous for introducing *Mercators Projection*, a system which allowed navigators to plot the same constant compass bearing on a flat map. His first maps were published in 1537 (Palestine), and 1538 (a map of the world), although his main occupation at this time was globe-making. He later moved to Duisburg, in Germany, where he produced his outstanding wall maps of Europe and of Britain.

In 1569 he published his masterpiece, the twenty-one-sheet map of the world, constructed on *Mercator's projection*. His *Atlas, sive Cosmographicae Meditationes de Fabrica Mundi,* was completed by his son Rumold and published in 1595. After Rumold's death in 1599, the plates for the atlas were published by Gerard Jr. Following his death in 1604, the printing stock was bought at auction by Jodocus Hondius, and re-issued well into the seventeenth century.

Charles V Monin was a nineteenth century French cartographer and publisher working in Paris and Cean. He was a member of the 'Société de Géographie' in Paris and published a number f maps and atlas' including "The Small National Atlas of the departments of France and its colonies" of 1835; "The Universal Atlas of Ancient, Medieval and Modern Geography" of 1938/9 , and the "Globe" of 1875.

Thomas Moule, originally a writer on heraldry and general antiquities, Moule (1784-1851) was an engraver born in Marylebone, London. From around 1816 to 1823 he was a bookseller with a shop in Grosvenor Square, London. He then became an inspector of letters in the General Post Office, where his responsibilities included trying to 'read' illegible hand writing. He is best known for his highly decorated county maps of England, steel-engraved and first published separately between 1830 and 1832.

Sir Roderick Impey Murchison (1792–1871) was a British geologist who first described and investigated the Silurian system.

Carlo Pellegrini (1839–1889), nicknamed Ape (Italian for bee) served from 1869 to 1889 as a caricaturist for Vanity Fair magazine. He was the first caricaturist to work for the magazine, originally signing his work as 'Singe' and later, and more famously, as 'Ape'. Pellegrini's work for the magazine made his reputation and he became one of the most influential artist to work for Vanity Fair, in which his caricatures were to be printed for over twenty years.

Aristide Michel Perrot (1793-1879) was a prolific nineteenth century French cartographer and essayist, a member of the *'Société royale académique des sciences',* and the '*Société de géographie*'. He is best known for his decorative miniature maps of British counties and the Departments of France.

Thomas Phillip (1770-1845) was a prolific and fashionable British history and portrait painter. In his lifetime he completed over 700 portraits. He studied at the Royal Academy Schools, finishing in 1791 and briefly working for Benjamin West. He exhibited at the RA between 1792 and 1846 and succeeded Fuseli as professor of painting there.

Jan Maurits Quinkhard (1688-1772) was a Dutch painter and draughtsman, active in Amsterdam.

Prof Henry Darwin Rogers (1 August 1808 – 26 May 1866) was an American geologist who carried out numerous geological and mineralogical surveys of the United States in the middle of the nineteenth century, culminating in the 1858, two volume, publication of 'The Geology of Pennsylvania, a Government Survey'.

Aegidius Sadeler II was a Flemish painter and engraver active in the seventeenth-century. He is often referred to as the greatest engraver of the Sadeler dynasty. As a child Sadeler lived in Cologne (c. 1579), then Munich (c. 1588). He trained in Antwerp, worked in Rome (1593), then moved to Munich to work with his uncles Jan and Rafael (1594). He travelled with them to Verona, and probably Venice, between 1595 and 1597. He settled in Prague in 1597, where he was mainly employed by Emperor Rudolf II. For some time he lived with Bartholomeus Spranger, whose works he engraved. He collaborated with Jacobus Typotius on the Prague emblem book, *Symbola Divina et Humana* (1601-3).

Marco or Marcus Sadeler was a publisher, working in Venice in the seventeenth century. His relationship to the rest of the Sadeler family is unknown. He inherited the majority of Justus Sadeler's stock, and was a great rival to the Remondini in the 1660s. Danckers Danckerts acquired some of his plates in Venice in 1655 and 1656. His stock was eventually sold after his death to the Remondini in 1709.

George Sandys (1578-1644) was a British poet and politician. After studying at Oxford he became colonial treasurer for agriculture and industry of the Virginia Company. In his lifetime he was much admired as a translator of Latin poetry. In 1610, he spent a year in Turkey, Palestine and Egypt. His observations soon saw him regarded as a special authority on the Levant. His good documentation and literary bent marks the transition from travel literature of the sixteenth century to that of the seventeenth. It is also representative of those travel narratives that oscillate between geography, history and autobiographical travelogue of fluid and contradictory character. His publication made an essential contribution to the geographical and ethnographical knowledge of its time. It was translated into German and Flemish, and ran through nine editions in the seventeenth century alone.

The Society for the Diffusion of Useful Knowledge' (SDUK), founded in 1826 and lasting only until 1848, was a Whiggish London organisation that published inexpensive texts intended to adapt scientific and similarly high-minded material for the rapidly expanding reading public. The Society's main purpose was to encourage universal literacy by publishing numbers of books of good quality that would be affordable to all. It was established mainly at the instigation of Lord Brougham with the objects of publishing information to people who were unable to obtain formal teaching, or who preferred self-education. Over 200 maps and plans were produced, first sold as part works on subscription and from 1844 in a variety of bound atlases.

Joseph Constantine Stadler (fl. 1780 - 1822) was a printmaker of German origin. He settled in London in the 1780's and, since he specialised in aquatint engraving, became responsible for the successful production of many ambitious topographical works. Amongst these were Philippe Jacques de Loutherbourg's '*Picturesque Scenery of Great Britain*', as well as numerous commissions for Rudolph Ackermann including '*Views of London*', and '*Public Schools*'.

Thomas Sopwith (1803-1879) was a Victorian surveyor and civil engineer.

John Walker (fl. 1813-1873) and Charles Walker (1799-1872) were British cartographers, geographers, and map engravers, and the sons of the engraver and Admiralty hydrographer, John Walker (fl. 1783-1831). John, the better known of the two sons, was a founding member of the Royal Geographic Society. A third brother, Thomas (fl. 1805-1865), succeeded his father as a hydrographer to the Admiralty.

Josiah Wood Whymper (1813-1903) was an English wood engraver, book illustrator and watercolourist who specialised in riverscapes. He was also well known for his fine engravings of animals, fish and landscapes for *'The Society for Promoting Christian Knowledge'.*

Henry Winkles (1801–1860) was an English architectural illustrator, engraver and printer, who, together with Karl Ludwig Frommel founded the first studio for steel engraving in Germany.

James Wyld (1812-1887) was a British publisher and cartographer. His greatest geographical achievement was *Wyld's Great Globe,* exhibited in Leicester Square between 1851 and 1862. The globe, sixty feet high and lighted with gas, was at that point the largest ever constructed. He was geographer to Queen Victoria and H.R.H. Prince Albert.

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